NDIA

2017 Global Explosive Ordnance Disposal (EOD) Symposium & Exhibition

Realigning the EOD Force for the Future

Produced by NDIA and the EOD Warrior Foundation

Agenda
Sponsors
Exhibits
Attendee Roster

August 8–9, 2017
Bethesda North Marriott Hotel & Conference Center
North Bethesda, MD

NDIA

LOCATION

Bethesda North Marriott Hotel & Conference Center
5701 Marinelli Road
North Bethesda, MD 20852

ATTIRE

Appropriate dress for the conference is business casual for civilians and Class B uniform or uniform of the day for military personnel.

ID BADGE

During conference registration and check-in, each attendee will be issued an identification badge. Please be prepared to present a valid picture ID. Badges must be worn at all conference functions.

NDIA EVENTS

Please visit the NDIA website for a complete listing of the events we offer.

www.ndia.org/events

TUESDAY, AUGUST 8, 2017

7:00 AM – 5:00 PM
Registration Open
Grand Foyer

7:00 AM – 8:00 AM
Networking Breakfast
Grand Foyer

8:00 AM – 12:00 PM
General Session
Salons F-H

8:00 AM – 8:15 AM
Welcoming Remarks
- Gen Herbert Carlisle, USAF (Ret), *President & CEO*, NDIA
- Ms. Nicole Motsek, *Executive Director*, EOD Warrior Foundation
- Mr. Eugene Squires, *Senior Partner*, Squires & Fulcher, LLC Management Consultants; *Chair*, NDIA EOD Committee

8:15 AM – 8:45 AM
Keynote Address: Technology Innovation to Counter Improvised Threats and DTRA Integration Update
- LTG Michael Shields, USA, *Director,* Joint Improvised-Threat Defeat Organization (JIDO)

8:45 AM – 9:30 AM
Keynote Address: ISIS IED Threat Update
- Mr. Michael Cardash, *Former Commander,* Israeli National Police Bomb Squad, *Senior CIED Analyst & Author*, Mobius Reports

9:00 AM – 6:30 PM
Exhibit Hall Open
Salons A-E

9:30 AM – 10:00 AM
Networking Break
EOD Silent Auction Opens
Salons A-E

10:00 AM – 10:30 AM
JIDO Technology Outreach Session: JIDO Overview and Counter IED Challenges
- Ms. Lisa Swan, SES, *Deputy of Material Solutions*, JIDO
- Mr. Jon Young, *Division Chief, J8 Requirements,* JIDO

10:30 AM - 11:15 AM

EODWF State of the Foundation and Warrior Panel: Personal Stories of Growth
Moderator: Mr. Ken Falke, *Chairman*, EOD Warrior Foundation
- Mr. Joey Ferguson, Retired Marine, EOD Warrior

11:15 AM - 12:00 PM

Counter IED Panel: Global and Service Perspectives
- COL Gareth Bex, United Kingdom, *Commander,* 20th EOD & Search Group
- COL Gerardo Meneses, USA, *Director*, Asia Pacific Counter IED Fusion Center
- LtCol Pete Peril, *Deputy Commander*, Joint Counter Explosive Threat Task Force, Canadian Armed Forces

12:00 PM - 1:30 PM

Networking Lunch
Salons A-E

1:30 PM - 2:15 PM

Concurrent Session: Weapons Technical Intelligence Enterprise Update
Salons F-H
Session Chair: Mr. Amos Gallagher, *WTI Branch Chief*, JIDO
- Ms. Rhonda Craig, *Unit Chief,* Evidence Management Unit, Terrorist Devices Analytical Center, FBI
- CDR Steve Duba, USN, *OIC,* EOD Expeditionary Exploitation Unit ONE
- Mr. Damien Spleeters, *Director of Iraq-Syria Operations,* Conflict Armament Research

1:30 PM - 3:00 PM

Concurrent Session: JIDO Technology Outreach
White Flint Amphitheater
- Dr. Wayne Stanbery, *Chief, Technology Development Branch,* JIDO
- Dr. George Pappas, *Scientist,* JIDO
- Dr. William Thissel, *Engineer,* JIDO

2:15 PM - 3:00 PM

Concurrent Session: Counter IED Speaker: FBI Hazardous Devices Training and Approach
Salons F-H
- SABT John Stewart, *Director*, FBI Hazardous Devices School

CONFERENCE CONTACT

Ms. Lynette Petito
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lpetito@ndia.org

SPONSORSHIP CONTACT

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ADVERTISING CONTACT

Advertise in *National DEFENSE* magazine and increase your organization's exposure. *National DEFENSE* will be distributed to attendees of this conference, as well as other NDIA events. For more information, please contact:
Ms. Kathleen Kenney
Director, Sales, NDIA
(703) 247-2576
kkenney@ndia.org

EOD COMMITTEE

Mr. Eugene Squires
Senior Partner, Squires & Fulcher, LLC Management Consultants
Chair, NDIA EOD Committee

Mr. Mark Sanders
Principal, R3 Strategic Support Group, Inc.
Symposium Chair, NDIA EOD Committee

EOD WARRIOR FOUNDATION SUPPORT

Ms. Nicole Motsek
Executive Director, EOD Warrior Foundation

3:00 PM – 3:45 PM **Networking Break**
EOD Silent Auction
Poster Board Presentations
Salons A–E

3:45 PM – 5:00 PM **Concurrent Session: EOD Material and Technology Panel: Capability Gaps and Operational Priorities**
Salons F–H
Moderator: CAPT Scott Kraft, USN, *Commanding Officer*, Naval Surface Warfare Center, Indian Head EOD Technology Division
- RDML Brian Brakke, USN, *Commander,* Navy Expeditionary Combat Command
- BG Mark Strong, USA, *Deputy,* G-33 and *Program Member*, Army EOD
- SES Edwin Oshiba, USAF, *Deputy Director of Civil Engineers*
- Col Michael Boyd (Ret), USMC, *Deputy*, Engineering & EOD Branch

3:45 PM – 5:00 PM **Concurrent Session: JIDO Technology Outreach**
White Flint Amphitheater
- Dr. Ben Clough, *Engineer*, JIDO
- Dr. Hatcher Tynes, *Scientist,* JIDO

5:00 PM – 6:30 PM **Welcome Reception**
Salons A–E

WEDNESDAY, AUGUST 9, 2017

7:00 AM – 5:00 PM **Registration Open**
Grand Foyer

Endeavor ROBOTICS®

7:00 AM – 8:00 AM **Networking Breakfast**
Grand Foyer

8:00 AM – 11:45 AM **General Session**
Salons F–H

8:00 AM – 8:10 AM **Opening Remarks**
- Mr. Mark Sanders, *Principal,* R3 Strategic Support Group, Inc.; *Symposium Chair*, NDIA EOD Committee

8:15 AM – 9:00 AM **Keynote Address: Joint Task Force Atlas Operations Supporting Combined Joint Task Force – Operation Inherent Resolve**
- COL Frank Davis, USA, *Commander*, 71st EOD Group

9:00 AM – 9:45 AM **Belgium Bombing of 22 March 2016 Briefing**
- Commander Pierre-Yves Rosoux, Navy, *Commander,* Belgium Armed Forces
- Mr. Dimitri De Vreeze, *Adjutant*, Royal Belgian Association of Explosive Ordnance Disposal Technicians

9:00 AM – 3:15 PM **Exhibit Hall Open**
Salons A–E

9:45 AM - 10:15 AM

Networking Break
EOD Silent Auction
Poster Board Presentations
Salons A-E

10:15 AM - 11:00 AM

Combating WMD Panel: DTRA RDT&E Programs Supporting the CWMD Mission
Moderator: Mr. Robert "Bobby" McNabb, *J9 Directorate*, *Combating Terrorism Technologies Division (CXC)*, DTRA

- Dr. Phillip Cole, *Senior Technical Director*, Science and Engineering, DTRA
- Dr. Gary Hook, *Director*, *Test Science Division (J9)*, DTRA
- Supervisory Special Agent Charles Hoyt, *Section Chief,* FBI Weapons of Mass Destruction Directorate

11:00 AM - 11:45 AM

EODWF Professional Speaker Series: Saving Lives in DoD with the Columbia Suicide Severity Rating Scale

- Dr. Kelly Posner Gerstenhaber, *Director, Center for Suicide Risk Assessment*, Columbia University

11:45 AM - 12:45 PM

Networking Lunch
Recognition/Awards for Technical Paper/Poster Boards
Silent Auction Closes
Salons A-E

12:45 PM - 1:30 PM

Concurrent Session: Counter UXO Panel: The Future of Open Burning/Open Detonation After Camp Minden
Salons F-H

- Mr. J.C. King, *Director, Munitions and Chemical Matters,* Department of the Army Headquarters
- Mr. Jason Poe, *Director,* Explosive Services international (ESI)
- Mr. Kenneth Schuster, *Engineer*, Environmental Protection Agency

12:45 PM - 1:30 PM

Concurrent Session: CIGNA Suicide Awareness Training Session
White Flint Amphitheater

- Dr. Christina Stasiuk, *Senior Medical Director,* CIGNA Mid-Atlantic

1:30 PM - 2:30 PM

Concurrent Session: Counter UXO Panel: Humanitarian Mine Action Priorities
Salons F-H

- Mr. Jonathan Green, *Director, Humanitarian Demining Training Center,* U.S. Defense Security Cooperation Agency
- Mr. Gerald Guilbert, *Deputy Director for Programs, Office of Weapons Removal and Abatement,* U.S. Department of State
- Dr. Kenneth Rutherford, *Director*, *Center for International Stabilization and Recovery,* James Madison University
- COL Allan Vosburgh, USA (Ret), *CEO*, Golden West Humanitarian Foundation

1:30 PM - 2:30 PM

Concurrent Session: Successfully Transitioning Out of the Military - Lessons Learned for Veterans & Employers
White Flint Amphitheater

- MG Randy Manner, USA (Ret)

2:30 PM – 3:15 PM **Networking Break**
EOD Silent Auction Payment & Item Pickup
Last Chance to View Exhibits
Salons A-E

3:15 PM – 4:45 PM **NATO Updates**

- COL Gareth Bex, United Kingdom, *Commander,* 20th EOD & Search Group
- LtCol Pete Peril, *Deputy Commander, Joint Counter Explosive Threat Task Force*, Canadian Armed Forces
- Commander Pierre-Yves Rosoux, Navy, *Commander,* Belgium EOD Group
- LTC Wes Rhone, USA, Department of the Army G-38 and U.S. Head of Delegation to NATO EOD and CIED Working Group

4:45 PM – 5:00 PM **Closing Remarks**

- Ms. Nicole Motsek, *Executive Director*, EOD Warrior Foundation
- Mr. Eugene Squires, *Senior Partner*, Squires & Fulcher, LLC Management Consultants; *Chair*, NDIA EOD Committee

5:00 PM **Symposium Adjourns**

SILENT AUCTION ITEMS DONATED

- Handmade Patriotic EOD Quilt
- Custom Pistol
- LALO Boot/Shoe Gift Certificate
- Custom Knives
- Factory Refurbished Dell Latitude 12 Rugged Extreme 7202 Tablet in excellent condition – Windows 10 Operating System.
- 710 Robot RC
- EOD Cellars Wine Basket
- Hog Hunt for 5
- Spy Sunglasses
- Newton Shoe Gift Certificate
- Custom EOD Stained Glass Artwork

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SIERRA NEVADA CORPORATION®

Sierra Nevada Corporation (SNC) is a privately held, advanced technology company headquartered in Sparks, Nevada. SNC provides customer-focused, innovative solutions in the areas of aerospace, aviation, electronics, and systems integration. The company has been honored as one of "The World's Top 10 Most Innovative Companies in Space," one of America's fastest- growing companies, and the Top Woman-Owned Federal Contractor in the U.S. SNC's diverse technologies are used in applications including telemedicine, navigation and guidance systems, threat detection and security, commercial aviation, scientific research, and infrastructure protection, among others.

Sierra Nevada Corporation's Electronic Warfare & Range Instrumentation (EWR) Business Area specializes in cutting edge Electronic Warfare (EW) and Range Instrumentation (RI) solutions. SNC's core capabilities include System Engineering (SE), Radio Frequency (RF) and Information Assurance (IA) engineering, digital design, hardware integration design & development, software design & development, sustainment and new equipment training.

EWR range instrumentation products were developed to support U.S. Army Operational and Developmental Testing (OT/DT), with threat-accredited synthetic jammers and rugged tactical communication Local Area Network (LAN), radio, and network analyzers and data collectors. In addition, SNC's EWR products are currently fielded in support of numerous United States military contingencies worldwide, protecting our forces against Radio Controlled Improvised Explosive Devices (RCIEDs).

Founded in 1963, SNC operates under the leadership of owners, CEO Fatih Ozmen and President Eren Ozmen. The company's talented workforce of nearly 3,000 personnel work within six business areas, multiple subsidiaries and affiliates, and operate from 34 locations in 19 U.S. states, England, Germany and Turkey providing global support to customers.

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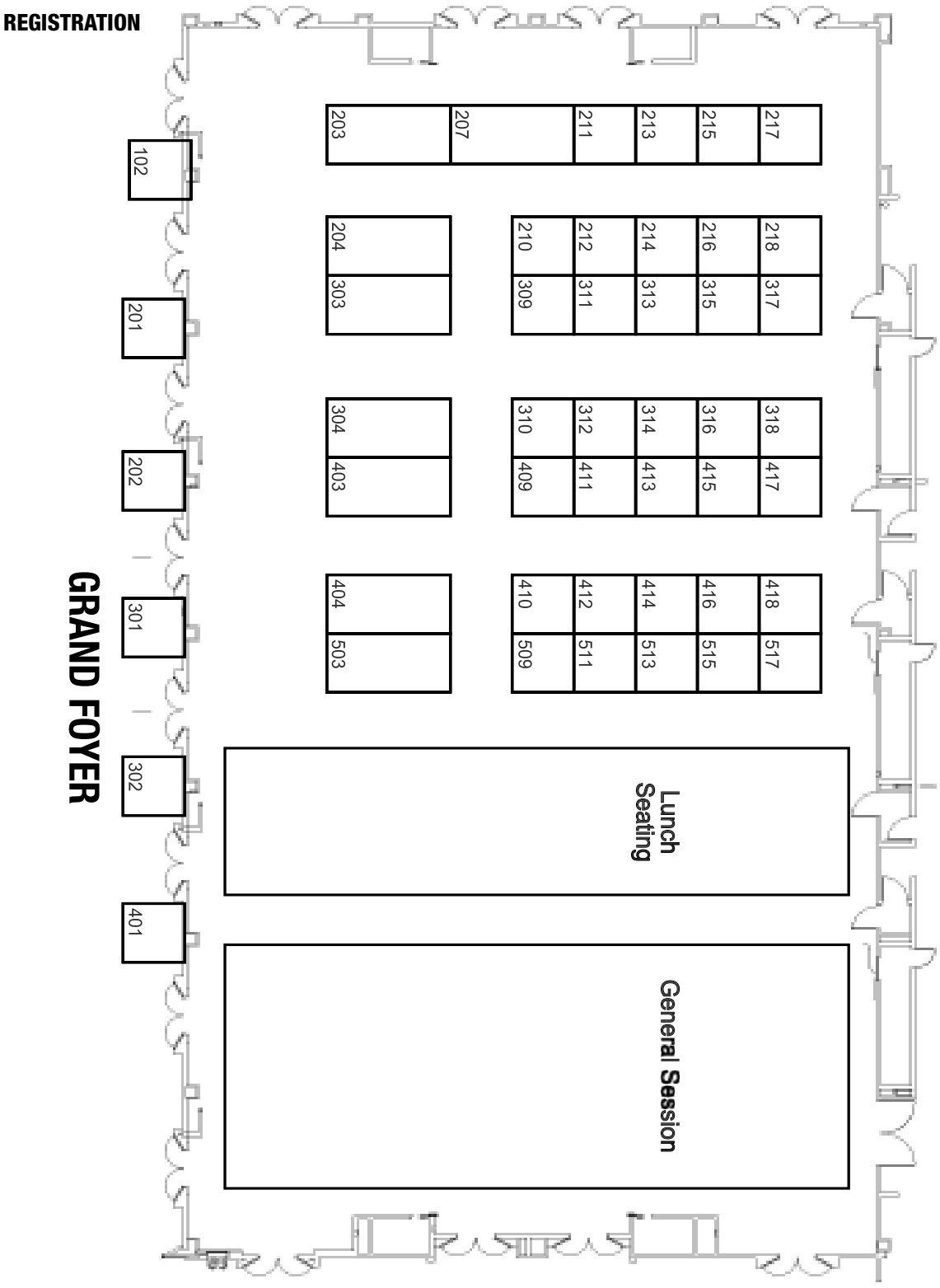
FEDERAL RESOURCES®

Federal Resources (FR) is a leading provider of quality products and mission-critical solutions that support the U.S. Military, Federal Government, State/Local Responders, and International Markets – all at a single point of contact. Specializing in comprehensive life-cycle sustainment solutions; procurement and acquisition; technical services and asset management; and training expertise, the organization is dedicated to serving its diverse range of well-established and emerging market segments. Since 1986, the rapidly growing company has strived to fulfill and expand upon its mission to ensure end-users are equipped with the most innovative, reliable, and cost-effective products and technologies available on the market; as a result, FR collaborates with more than 700 trusted vendors around the globe.

NDIA

EXHIBITION HALL



EXHIBITING COMPANIES

Listed by booth number

102	SYNEXXUS
201	United States Bomb Technician Association
202	55th Ordnance Company (EOD)
203	RE2 Robotics
204	W.S. Darley & Company
207	Roboteam Inc.
210	Scanna MSC Inc
211	Delta-Xray, Inc.
212	Alluviam LLC
213	RINI Technologies Inc.
214	ANDE
215	SERIM RESERACH CORPORATION
216	The Texas A&M Engineering Extension Service Product Development Center
217	Med-Eng
218	Nabco Systems LLC
301	EOD Warrior Foundation
302	IABTI
303	Remotec/Northrop Grumman
304	ADS
309	R3 Strategic Support Group
310	QinetiQ North America
311	Tripwire/iK9
312	Alakai Defense Systems
313	Ideal Blasting Supply Inc
314	Field Forensics, Inc.
315	Mithix Pro
316	Explotrain, LLC
317	Honeywell (RAE Systems)
318	Inert Products LLC
401	National Defense Industrial Association (NDIA)
403	Federal Resources
404	NSWC Indian Head EOD Technology Div
409	CEIA USA
410	908 Devices
411	QSA Global, Inc.
412	DSA Detection
413	Johns Hopkins Applied Physics Laboratory
414	L3 Insight Technology
415	Mistral Group
416	Avatar Partners Inc
417	Battlefield Team Clearance Licensing
418	ORTEC
503	Endeavor Robotics
509	Mohawk Electrical Systems, Inc.
511	Innervision Security / Novo DR
513	Consortium Management Group
515	Sierra Nevada Corp
517	Bren-Tronics, Inc.

55th Ordnance Company (EOD) **202**
The 55th OD CO (EOD) conducts EOD operations to reduce or eliminate the hazards of munitions and explosive devices. On order, conducts defense support of civil authorities (DSCA) by providing explosive ordnance disposal (EOD) support to federal, state, and local LE agencies.

908 Devices **410**
At 908 Devices we are building ridiculously small, and simple purpose-built tools based on remarkable mass spectrometry technology. Our flagship product, M908, is used by leading CBRNE organizations around the world for the fast and accurate confirmation of priority chemical threats, including chemical warfare agents, toxic industrial chemicals, and precursors.

ADS **304**
ADS understands that EOD operators are more than the world's ultimate bomb squad and we work with a broad range of industry leading suppliers to equip the EOD operator with cutting-edge technologies to: - Protect against and combat evolving CBRNE threats - Prepare for extreme environments - Detect and Defeat the device - Minimize the risk downrange With more than 42 different contracting options available, ADS provides not only the latest cutting-edge technologies, but the widest breath of rapid-procurement options available in industry. Come see us in booth 504 and allow ADS and our partner suppliers to provide solutions for the challenges you face. BRING US YOUR MISSION.

Alakai Defense Systems **312**

Alluviam LLC **212**
Adopted by the US Military, NATO, coalition partners and other civilian, intelligence and military agencies, HazMasterG3 puts state-of-the-art HME/IED decision support in the hands of those that need it most. HazMasterG3 is the only handheld CBRNE/HME Decision Support System to have earned U.S. DHS (Department of Homeland Security) certification and designation as an approved anti-terrorism technology.

ANDE **214**
ANDE is on a mission to create a safer world through Rapid DNA technology. DNA is the most powerful biometric and forensics tool on the planet, and ANDE enables this technology to move from the lab to the field – delivering answers in less than 2 hours. ANDE is designed and tested to U.S. Military Specification 810G for reliable operations in any field-forward operating environment.

Avatar Partners Inc **416**
AVATAR Partners Inc. (API) is a women-owned small business that specializes in Simplifying Complex Systems for the Warfighter. Our solutions include Software, Logistics, Hardware and Training solutions for the Government. Innovation, flexibility and cost-effective solutions are what we do best. We have a 10 year track record of providing superior solutions on- time and within budget, ensuring highly satisfied customers.

Battlefield Team Clearance Licensing **417**
BCTL Co. provides software to streamline field operations. Plan your operation details using Mystic HQ, which in turn is downloaded to Mystic Patrol so that you can more efficiently Execute in the field. At the end of the mission, information is uploaded to HQ where it is available for immediate QC approval. HQ automatically generates the necessary Reports. By using Mystic software solutions you can save up to 15% of your project costs and virtually eliminate data recording and transfer errors.

Bren-Tronics, Inc. **517**
Supporting the warfighter and EOD teams for 40+ years, all made in the U.S.A. Lithium-Ion batteries for every major military robot system, from small hand-held robots used on ground, air and sea to larger robotic platforms. Tactical chargers that get power from solar, vehicles, and other batteries in any climate between -40C / 80C. High energy additions include 24V Li-Ion batteries to start./ power military vehicles (6T) + high energy batteries for mobile/fixed silent watch applications (>3 kWh).

CEIA USA **409**
CEIA Ground Search Metal Detectors provide overall superior performance in the areas of detection distance, soil compensation capability and immunity to external interference. CEIA USA provides nationwide sales, service and customer support to customers in North America. Dynamic solutions are the foundation of CEIA USA's commitment to customer satisfaction. For more information, visit www.ceia-usa.com.

Consortium Management Group **513**
Operating under Other Transaction Agreements (OTAs) with the Departments of the Army and Interior, Consortium Management Group, Inc. provides a cost-effective and collaborative acquisition alternative to the FAR for its members seeking to do business with the

Federal Government, and for rapid acquisition across the DoD of innovative technologies in support of the Warfighter through its consortia, one focused on energy, the environment and demilitarization; and the other on C4ISR and cyberspace.

Delta-Xray, Inc. **211**
Delta-Xray is the US agent for Vidisco, Ltd. Our Systems are used in the security, non-destructive testing, intelligence and VIP protection mission areas. Our systems are used by over 350 police departments, every US federal and military agency and over 65 countries. Our Flat Panel systems boast 3.9+ line pairs/mm resolution and penetrate 3 inches steel. All systems man-portable, capable of detecting explosives, drugs, etc., fully integrated with robots. www.vidisco.com for specifications.

DSA Detection **412**
DSA manufactures X-ray correct inert explosive simulants, IED training aids, and test articles used in training screeners to identify threats and to verify security checkpoint equipment is properly identifying threats. DSA then combines all its products and expertise into comprehensive and in-depth classroom and CBT training for threat recognition and security equipment operation, tailored to meet all levels of detection.

Endeavor Robotics **503**
Endeavor Robotics brings an established leadership team with decades of experience in the mobile robot industry, the best roboticists who collaborate with end-users to develop robots for worldwide markets, and veteran field service engineers who keep you in the fight. Our family of robots includes 5-lb FirstLook, less than 20-lb SUGV, man-portable PackBot, and heavy-duty Kobra. To date, we have delivered more than 6,000 robots worldwide.

EOD Warrior Foundation **301**
The EOD Warrior Foundation is a 501(c)(3) non profit organization that was established through the March 1, 2013 merger of the EOD Memorial Foundation and the Wounded EOD Warrior Foundation to streamline and increase our capacity to support the EOD community.

Explotrain, LLC **316**
Since 1999, Explotrain's patented technologies have been used to provide more effective training in EOD, C-IED, K9 and Battlefield Effects. Our non-pyrotechnic Blast Simulators and Inert Functional IED training aids provide a safe, realistic, and cost effective solution for creating functional training environments.

Federal Resources **403**
Federal Resources offers safety and homeland security products backed by the deep product knowledge you need. Federal Resources is a GSA Contract holder and DOD EMall Contract holder, who is dedicated to providing best in breed products that meets all customers expectations. Industries we serve are Industrial, Fire/EMS, Military, & Law Enforcement. Federal Resources team strives to meet mission critical delivery requirements allowing our users to execute their mission.

Field Forensics, Inc. **314**
FFI Tactical (a division of Field Forensics, Inc.) provides cutting-edge tactical equipment for EOD, bomb squads, law enforcement, security, and humanitarian demining and UXO clearance team, plus devices for chemical detection and identification including those for explosives, narcotics and precursor chemicals. Portable X-Ray, Constant Potential X-Ray Sources, Metal Detectors, Bomb Suits, Search Suits, Remote Firing Systems

Honeywell (RAE Systems) **317**
RAE Systems by Honeywell innovates, designs and manufactures gas sensors and radiation detectors. RAE Systems' rugged, proven, and integrated multi-gas and radiation detectors meet all military standards and specifications. Easy to maintain in the field and with a global infrastructure for comprehensive support, our products operate on an open platform and can integrate with other third-party systems. Our real-time safety and threat detection systems helps save lives and maintain safety.

IABTI **302**
The International Association of Bomb Technicians & Investigators (IABTI) is an independent, non-profit, international professional association formed to counter the criminal use of explosives. Our goal is achieved through the exchange of information, expertise, and training: in-service training & technology expos, bi-monthly magazine & annual EOD Equipment Buyer's Guide, certification as Certified International Post Blast Investigator, Scholarships, Accidental Death Benefit, and much more.

Ideal Blasting Supply Inc **313**
Ideal Blasting Supply offers Pan Disrupter, EOD Tools, Custom Kitting, Blasting Machines, EOD GoBag, UAV/ Drones and More

Inert Products LLC **318**
Inert Products, LLC provides Law Enforcement, Homeland Security and the United States Department of Defense with extremely durable, highly realistic inert training aids used in training against terrorist threats. Located in Scranton, PA, Inert Products, LLC produces and supplies support materials used by security forces in training to recognize, respond to, and mitigate the threat of explosives & terrorism.

Innervision Security / Novo DR **511**
InnerVision Security serves the extensive security industry with advanced technology bringing solutions "into view" for the many potential threats we face each day throughout the world. Committed to providing the best solutions for the men and women who expose themselves to these dangers keeping our country, borders, buildings, and families safe.

Johns Hopkins Applied Physics Laboratory **413**
The Johns Hopkins University Applied Physics Laboratory (APL) presents the NAVSEA Advanced EOD Robotic System (AEODRS) program, encouraging widespread industry participation to fulfill the EOD mission through integration of various capability modules via a common system architecture, system testbed for test development and compliance, and representative integration platforms for risk reduction.

L3 Insight Technology **414**
L3 Insight Technology is a global leader in the development and production of advanced night vision and electro-optical technology and systems for the U.S. military, federal agencies, public safety and sporting communities, and international markets. Insight Technology provides the most extensive portfolio of products supporting the warfighter, offering all essential systems to enable them to accurately see, maneuver, locate, target and fire during the day, at night or in adverse weather.

Med-Eng **217**
All branches of the U.S. military trust Med-Eng bomb suits for life-saving protection against Improvised Explosive Devices (IEDs) and other blast threats, while Med-Eng suits, robots, blast sensors and specialized tools are trusted in 100 countries worldwide. Med-Eng is a brand of the Safariland Group.

Mistral Group **415**
The Mistral Group is a team of independent companies, each operating in different markets worldwide, while collectively sharing the mission of "bridging" operational gaps in the Defense, Homeland Security, and Law Enforcement communities with practical, innovative, and field ready solutions. Mistral is a US owned, small business operating since 1988.

Mithix Pro **315**
Mithix Pro LLC is a SDVOSB US Business established in 2007. We manufacture tools, equipment, kits and custom kit solutions for EOD, Bomb Squads, Special Forces, Combat Engineers, Demining, Recon and other Forward Operators. Mithix Pro Equipment is used for search, identification, remote and semi-remote manipulation, render-safe, and disablement of IEDs, booby-traps, landmines, HAZMAT Materials and other hazardous devices as well as survival, safety, rescue and recovery operations.

Mohawk Electrical Systems, Inc. **509**
Working from customer specifications, Mohawk Electrical Systems, Inc. combines precision manufacturing capabilities with quality components to produce custom, basic or multi-stage assemblies used in the defense, oil and gas, pyrotechnics, instrumentation and mining industries. Core Products include: Bridgewire and Ordnance Products Electromechanical Assemblies Cable and Harness Assemblies Printed Circut Board (PCB) Assemblies Molded Elastomeric Products M18A1 & M68 Claymore Weapon Systems ISO 9001:2015

Nabco Systems LLC **218**
The gold standard in explosive & CBRN containment solutions, NABCO Systems provides superior quality products and service to all branches of the US Armed Forces, police departments and military services in more than 25 countries around the world. NABCO offers unrivaled products for explosive containment including DDESB-Approved Chem/Bio Total Containment Vessels & Reduced Q/D-Rated Explosive Magazines; Suspect Package Containment for security checkpoints; and the EOD Grabber Pole.

National Defense Industrial Association (NDIA) **401**
NDIA engages thoughtful and innovative leaders to promote the best policies, practices, products and

technology for warfighters and others who ensure the safety and security of our nation. NDIA offers 25 chapters, 27 divisions for corporate involvement, award winning publications, and numerous conferences and trade shows annually. Corporate and individual memberships are available. US government and military are welcome to join free of charge.

NSWC Indian Head EOD Technology Div **404**
The Indian Head EOD Technology Division develops and delivers Explosive Ordnance Disposal (EOD) technology, knowledge, tools and equipment and their life cycle support to meet the needs of the Department of Defense, combatant commanders and our foreign and interagency partners, and supports the Executive Manager for EOD Technology and Training.

ORTEC **418**
ORTEC manufactures the PINS-3 system for EOD Teams. PINS-3 is an advanced, portable, non-destructive assessment system that analyzes and provides on-site identification of chemical warfare agents, explosives, toxic industrial chemicals, and Rad/Nuke materials in unidentified munitions or suspicious packages. This system was commercialized in conjunction with Idaho National Laboratory. Also on display will be the new Detective X hand-held radioisotope identifier.

QinetiQ North America **310**
QinetiQ North America provides mission critical and lifesaving products to the defense, security, utility and commercial markets worldwide. We specialize in unmanned robots, available in a variety of sizes and with varying capabilities, that enables warfighters, first responders to stay out of harm's way. Our family of robots include small, medium and large unmanned vehicles that can be configured for specific tasks, such as IED defeat, CBRNE/hazmat identification and reconnaissance.

QSA Global, Inc. **411**
QSA Global Inc., manufacturer of OpenVision™ live-video x-ray systems, has a worldwide reputation for quality, reliability and safety. OpenVision™ achieves real-time inspection and investigation of unattended items and suspicious situations. OpenVision™ is lightweight and flexible, enabling mission specific configurations; reducing risk while investigating potential threats and is deployable in hand-held or robot equipped mode in under two minutes.

R3 Strategic Support Group **309**
R3 Strategic Support Group, Inc. (R3) is an agile SDVOSB that provides innovative strategic solutions across a broad spectrum of government and commercial domains. Our principal mission areas include Counter-IED; Explosive Ordnance Disposal (EOD); Asymmetric and Irregular Warfare; Expeditionary and Joint Operations.

RE2 Robotics **203**
RE2 Robotics develops robotic manipulator arms that enable robots to better interact with the world – whether on the ground, in the air, or underwater. RE2 designs robust modular manipulators and humanlike dual-arm robotic systems with easy-to-use imitative controls that can be easily integrated onto a variety of platforms and enable personnel to perform dangerous and complex tasks at a safe distance. Learn more at www.resquared.com or email info@resquared.com.

Remotec/Northrop Grumman **303**
Military, EOD, first responders and law enforcement agencies worldwide rely on Remotec to help assure a safe, successful outcome for their most challenging missions. Remotec is the global leader in mobile robot systems for hazardous-duty operations

RINI Technologies Inc. **213**
Visit RINI Technologies to see our new Bomb Suit Cooling System. The system keeps the inside of the bomb suit at 72F in 115F ambient air temperature conditions.

Roboteam Inc. **207**
Roboteam designs, develops and manufactures cutting edge, user-oriented, multi-purpose, unmanned platforms and controllers for Defense, Law Enforcement and Public Safety missions. Our team includes dozens of highly experienced engineers that are dedicated to creating units that provide complete operational and tactical control, overall mission management and enhanced force coordination. Roboteam – Dominate The Unknown

Scanna MSC Inc **210**

Scanna MSC Inc, is a worldwide manufacturer and supplier of portable x-ray systems for defense and security applications. Our specialisation is integrating and customising x-ray imaging panels and components into highly reliable software controlled x-ray imaging solutions that work with Golden generators. Our Range Of Portable X-rays Include Scanx Scout CR Scansilc DR systems. The new Scansilc systems combine solid state flat panel amorphous silicon technology with fast x-ray acquisition

SERIM RESERACH CORPORATION **215**

The Discern® HME Detection Kit rapidly identifies multiple compounds commonly used in homemade explosives with a simple point of use testing system. This detection kit combines the simplicity of a single test with a sophisticated colorimetric detection process that easily distinguishes between various fertilizer compounds, Peroxide, Chlorate, or Perchlorate based HME's. The Discern HME Detection Kit can be easily used by all EOD and First Responders without the need for specialized training!

Sierra Nevada Corp **515**

Sierra Nevada Corporation (SNC) provides customer-focused solutions in the areas of aerospace, aviation, electronics, and systems integration, with applications including telemedicine, navigation systems, threat detection and security, and infrastructure protection. Founded in 1963 and headquartered in Nevada, SNC has a global workforce supporting its customers. www.SNCorp.com / EWR@sncorp.com

SYNEXXUS **102**

SYNEXXUS provides hardware, software, technical expertise and engineering support to the defense and commercial markets. Our "digital backbone" – the ELECTRONIC KEEL®, also known as "OBERON" within U.S. Army – has been deployed with U.S. Army and Joint EOD units in Iraq and Afghanistan since 2009, continuing through today. A ruggedized, open-architecture Data Distribution System, OBERON/EKEEL® provides a common operator interface for GFE or other platform equipment and applications.

The Texas A&M Engineering Extension Service Product Development Center **216**

TEEX is an adaptive and innovative service agency making a difference worldwide and makes a difference by providing training, developing practical solutions, and saving lives.

Tripwire/iK9 **311**

TripWire Operations Group is First Responders dedicated to First Responders. We prepare military, law enforcement, and other first responder personnel to protect our country by providing products, training, and services. iK9 is a premier comprehensive canine solutions provider of working dogs and handler education through our professional commitment to highly skilled well-bred dogs, industry intelligent master trainers, all at one of the nation's largest all inclusive training facilities.

United States Bomb Technician Association **201**

The Mission of the United States Bomb Technician Association is to assemble a community of operators, academics, equipment suppliers and innovators and provide a forum for them to share resources, ideas, and experiences in order to establish a network for collaboration in current and future endeavors to strengthen the community and enhance public safety.

W.S. Darley & Company **204**

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Explosive Ordnance Disposal Symposium
Exploitation of Improvised Weapon Systems

8 August 2017

Amos M. Gallagher

Weapons Technical Intelligence (WTI) Panel

CDR Stephen Duba, Officer in Charge

- Indian Head EOD Technology Division's
  - Explosive Exploitation Unit ONE (EXU ONE)

Ms. Rhonda Craig

- Unit Chief, Evidence Management Unit, Terrorist Explosive Device Analytical Center, FBI

Mr. Damien Spleeters

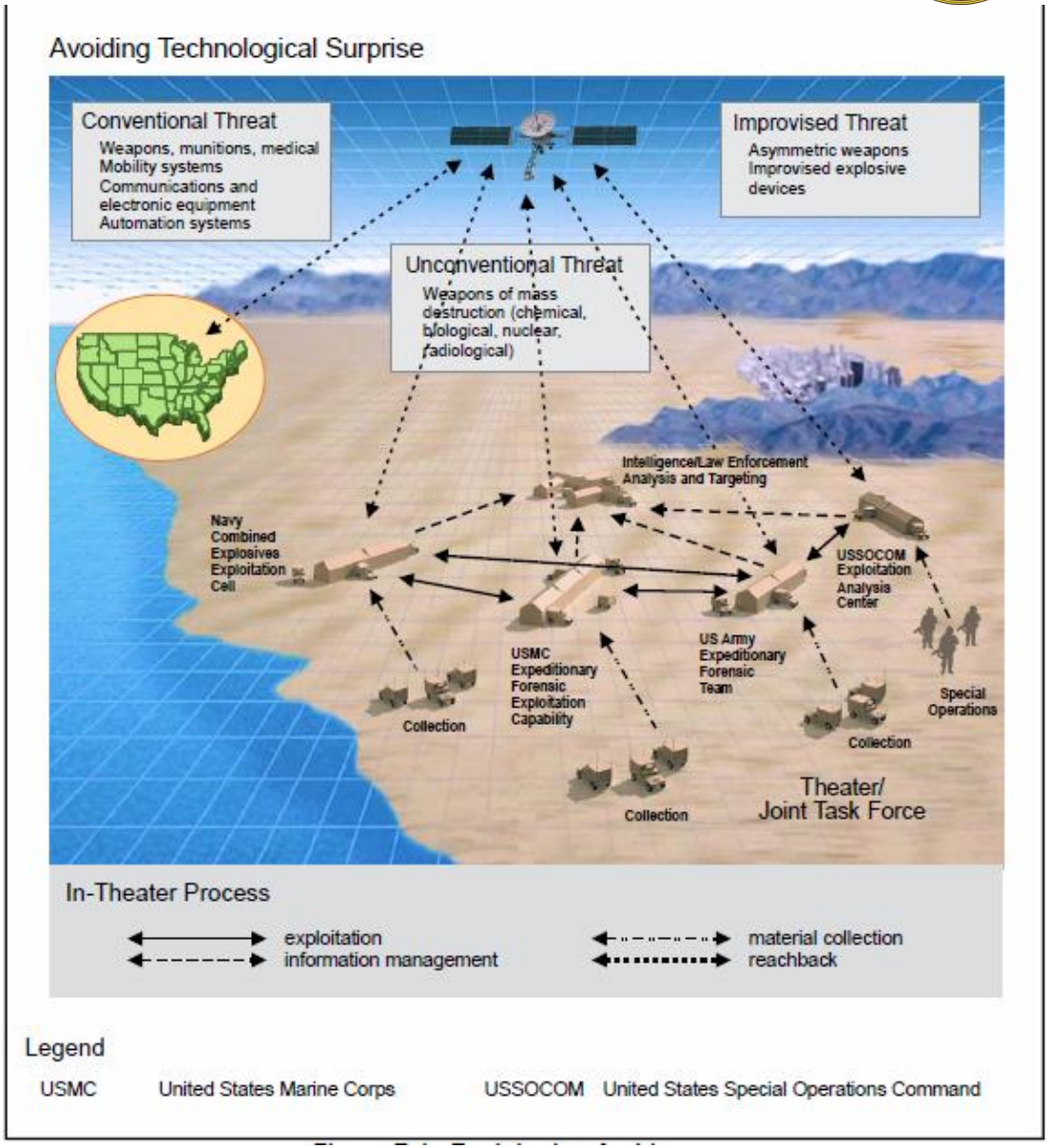
- Head of regional operations in Iraq and Syria, Conflict Armament Resolution (CAR)

Military Exploitation Architecture

Exploitation is accomplished through a combination of forward deployed and reach back resources to support commander's operational requirements

Exploitation Supports:

- Targeting
- Force Protection
- Prosecution
- Material and component Resourcing



Improvised Threat Exploitation Activities

(Documents, Weapons, Explosives, Electronic Components, etc.)

Level 1: Field Exploitation

Personnel search, tag, evacuate and/or safeguard collected materiel, documents and electronic components and storage media. Exploitation is conducted at the event/incident site or in relatively close proximity to extract information and determine whether further exploitation is warranted.

Tactical Level

Information & Intelligence

Materiel & Information

Level 2: Theater Exploitation

Exploitation is conducted by functional subject matter experts. Single and multiple source processing and fusion produce tactical and operational information and intelligence. Items of interest will be sent to an out-of-theater facility for additional exploitation, when required.

Operational Level

Information & Intelligence

Materiel & Information

Level 3: Out-of-Theater Exploitation

Exploitation is conducted by experts in laboratories and facilities outside the theater of operations equipped to extract information and intelligence of additional value. Single and multiple source processing and fusion produce input to wider all-source intelligence that supports deployed commanders, Alliance and coalition partners as well as national and NATO agencies.

Strategic Level

Exploitation Coordination and Integration

- Standardize terminology and reporting
  - IED Lexicon/UAS Lexicon
  - WTI Handbook
  - Exploitation reporting synchronization

- Sharing of Exploitation information between services, Interagency, partner nations, industry, etc…

- Codified Exploitation Enterprise Framework
  - Standardized process flow and material flow

- Scalable Capabilities including Reach-Back Analytical Support

"Facilitate the Coordination and Synchronization of Exploitation"

JOINT IMPROVISED-THREAT DEFEAT ORGANIZATION
APTO AUT MORIOR

Final Thoughts

- To be effective and responsive, exploitation requires a coordinated and synchronized comprehensive approach among all exploitation stakeholders…military, industry, academia, international partners and the whole-of-government

- During joint operations, exploitation capabilities should be task organized to form a tailored support package that satisfies a commander's forward deployed technical, forensic, and scientific intelligence and information requirements

- Exploitation supports the information needs of commanders, national policy and other strategic decision makers

Non-Line-of-Sight Detection

George Pappas

8 August 2017

HELPING WARFIGHTERS ADAPT

JIDO
JOINT IMPROVISED-THREAT DEFEAT ORGANIZATION

Agenda

- Person borne IEDs
- Vehicle borne IEDs
- Booby-trapped structures
- Small quantities of explosives
  - e.g., explosives in portable electronics
- Portable power source detection
- Summary

Person Borne IEDs

- Checkpoint
  - Multiple solutions have been developed
    - IR imaging, mm wave imaging, THz imaging, mm wave polarimetry, magnetometry, hyperspectral trace detection, swipe trace detection
  - Issue: What combination of sensors provides the performance, cost, footprint and throughput for any given installation

- Unstructured environment
  - Multiple personnel with different orientations
    - Identify individual and focus sensors
    - Ensure all individuals are examined in all orientations
  - Longer range sensors required

- Sensor for use by dismounts
  - Examine approaching personnel
  - Scan individuals in environment

Vehicle Borne IEDs

- Checkpoint
  - Multiple solutions have been developed
    - Forward and backscatter X-ray systems, Vehicle and Cargo Inspection System (VACIS), Muon and electron detection, hyperspectral trace detection systems, Radiation Detectors, Nuclear Quadrupole Resonance detection

  - Issue: What sensor, or combination of sensors, provides the performance, cost, footprint and throughput for any given installation

- Detection during VBIED transit
  - Covert sensors
    - Protection of deployed sensors
  - Tracking vehicles leaving suspicious sites
  - Vehicles avoiding checkpoints
  - Observing driver characteristics (biometrics)
  - Non-lethal vehicle stopping

Booby Trapped Structures

- Examples of types of bobby traps
  - Trip wire initiated explosives, PIR initiated devices, pressure plate under rug, etc.

- Small UAV
  - Mapping single level has been demonstrated
  - Multiple level mapping may be desirable
  - Detecting booby traps from small UAV is difficult

- Small UGV
  - Must be sacrificial
  - Possible equipment
    - Infrared imager
    - Backscatter x-ray
    - Manipulator arm

Small Quantities of Explosives

- Potential problem
  - Insurgent smuggling small quantities of explosives into a facility for later assembly into an IED
- Problems with existing solutions
  - X-ray: does not identify material, only provides shape and indication of approximate atomic weight
  - Swipe: insurgents are likely to understand the necessity of ensuring all surfaces are clean
  - Canine: Packaging to ensure there is no escaping vapor
- Possible solutions
  - Nuclear quadrupole resonance – currently too slow for small quantities but novel antenna can mitigate effect of noise
  - Neutron activation – currently too slow for small quantities, but novel, high flux neutron generator can reduce time to detect

Portable Power Source Detection

- Chemical detection
  - X-ray
    - provides image and
    - relative strength of reflected energy
  - Nuclear Quadrupole Resonance
    - Identifies chemical
    - Cannot penetrate metallic enclosure
  - Neutron activation
    - Identifies chemical
    - Short range and long integration time

- Connecting wire detection
  - 1 m and longer wires are detectable
  - Require techniques to detect shorter wires

Summary

- JIDO Interest Areas
  - Novel approaches to detecting PBIEDS in an unstructured environment
  - Man portable, low SWAP sensors for PBIED detection
  - Sensors that can be disguised as part of a city's infrastructure for scanning driver characteristics or vehicle contents
  - Low SWAP sensors for detecting booby traps
  - Sensors for the detection of small quantities of explosives
  - Sensors for the detection of portable power sources

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(U) Visualizing the RF Environment

Date August 8, 2017

Dr. Rich Thissell

HELPING WARFIGHTERS ADAPT

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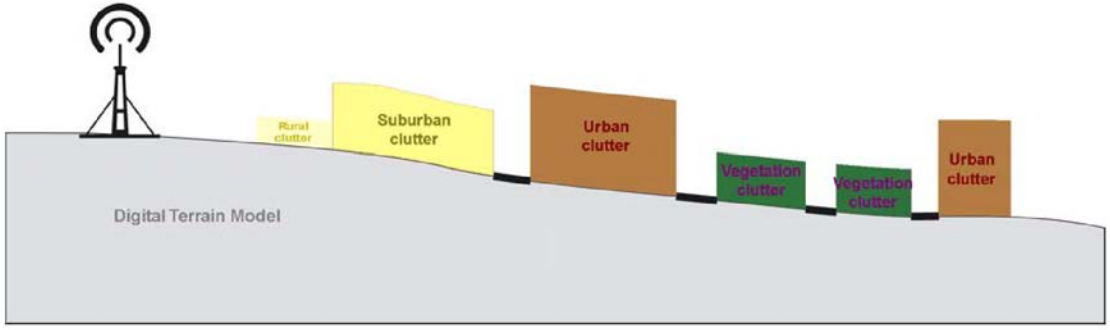
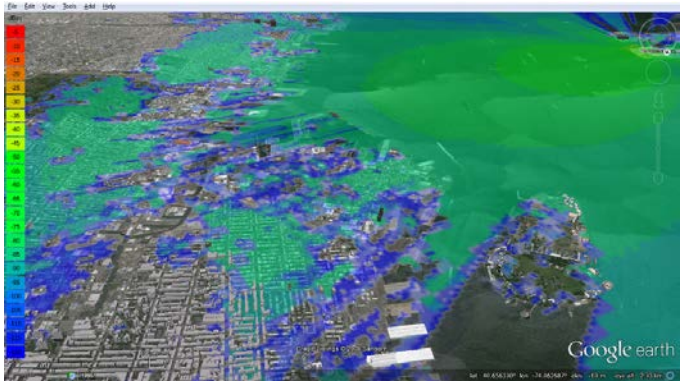
(U) Objectives

- (U) Modeling and simulation of RF sources, propagation, attenuation, interference, and multi-path effects for use by the tactical war-fighter.

- (U) More intuitive man-machine interfaces for data visualization of RF sources, propagation, attenuation, interference, and multi-path effects.





(U) Make the complex physics of RF propagation, etc. accessible and comprehensible to the non-technically educated to increase coalition spectrum dominance in the battlespace.

(U) Technical Challenges

- (U) RF propagation in a tactical environment is many dimensional, whilst our visual cortex has evolved to comprehend six data dimensions at most (*e.g.,* space, wavelength, intensity, and time). What are the best visualization methods for rapidly understanding the multi dimensions of RF propagation, such as space, time, phase, frequency bandwidth, and intensity?

- (U) Existing open source RF propagation software are designed for engineers to use and are not intuitive for non-technical users. An analysis of alternatives is required to determine the best framework to build upon to meet the requirements.

- (U) Service Labs and FFRDCs in house developed capabilities and DARPA RadioMap and PIXNET visualization projects need to be analyzed for potential capability merger.

- (U) Key visualization enabling capability may be Cesium V 1.35+ with 3-D tiles, released July 2017.

(U) Implicit Requirements

- (U) SWAP limited processing power at the tactical edge requires processing reach back using software as a service (*e.g.*, cloud computing converged with high performance computing) with data visualization over dis-advantaged networks.

- (U) Highly complex problem where engineering best practice dictate risk reduction through decomposition into multiple phases:

  – A. Phase 1: Modeling and simulation of tactical emitter and propagation environment with a plug-in architecture and multiple human factors assessments of novel data visualization techniques of modeling results. Deliverable is information and knowledge to inform requirements for subsequent phases.

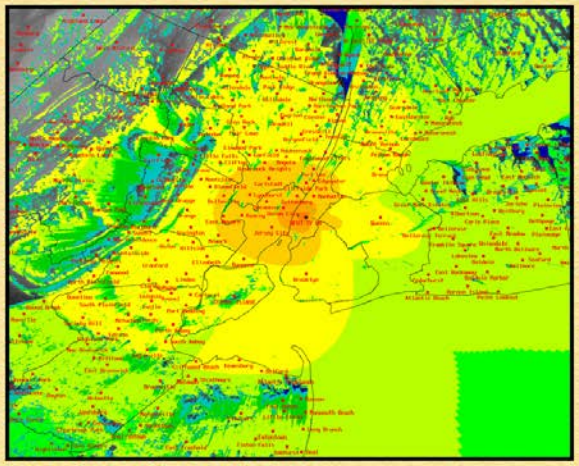


Figure 5

WFUT-TV 68's directional contour is illustrated in Figure 5 using **SPLAT!** Version 1.2.0. Although transmitting from New York City, WFUT's signal is directed west northwest toward Newark, New Jersey, the station's actual city of license.

Beginning with version 1.2.0, **SPLAT!** can generate KML files compatible with Google Earth when performing point-to-point analyses:

(U) Summary

- (U) Objective is modeling and simulation of RF sources, propagation, attenuation, interference, and multi-path effects for use by the tactical war-fighter in a dis-advantaged communication environment.
- (U) Objective has a special focus on more intuitive man-machine interfaces for data visualization of RF sources, propagation, attenuation, interference, and multi-path effects.
- (U) Implicit requirement for open source (OS) and GOTS RF propagation modeling frameworks with a plug-in architecture for RF emitters and standard objects.
- (U) Implicit requirement for HTML 5 browser and augmented reality device multi-dimensional data visualization frameworks based on OS and GOTS capabilities.
- (U) Multiple human factors engineering (HFE) assessments are anticipated, led by government HFE teams.
- (U) Development will follow the dev-test-ops maturation methodology.
- (U) Development will utilize the DI2E collaboration portal.

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(U) Stand-off Neutralization of Improvised Threats
Or
Lowering the Boom at Arm's Length

August 8, 2017

H. Hatcher Tynes, Ph.D.

HELPING WARFIGHTERS ADAPT

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S2D2 – Same "Stuff", Different Day

- Improvised threats haven't gone anywhere
  - Continue to evolve
  - Cheap, easy & effective
  - Hard to detect & defeat
  - They're IMPROVISED!

Improvised threats continue to put lives and materiel in jeopardy.

So, what are our options?

"And the Categories are…"

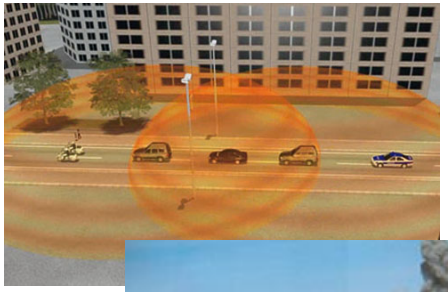
Detect	Neutralize	Mitigate	"S" words	Famous Navel Battles	Potent Potables

"I'll take 'Neutralize' for $12,000, Trebek!"

Detection has proven extremely difficult; mitigation is too late.

What do you mean by “Neutralize”?

- Prevent from functioning as intended, e.g.
  - Render safe
  - Render inert
  - Disrupt, “break up”
  - “Burn out”
  - Jam or suppress
  - Pre-detonate
  - Deflagrate
  - Cause to go low-order
  - Other…



“Neutralization” can be very context- and mission-dependent.

Oh, is that all you want?

- Want to neutralize devices & components
  - From a “safe” distance
  - Safely, reliably and verifiably
  - Covered, obscured or concealed
  - W/o knowing where or what they are
  - With no collateral damage

We want a safe, reliable, stand-off neutralization capability.

Well, how hard can that be?

- You almost never
  - Have access to threat
  - Know
    - Where it is
    - How it's put together
    - What's in "the box"
- Even if you do,
  - Proximity increases risk
  - May be covered/obscured
  - Generally no two are identical
    - No "quality control"

Even knowing the threat doesn't guarantee you can defeat it.

Key topics related to neutralization…

- Looking to neutralize…
  - UAS and UGS
  - VBIED, PBIED
  - HME

- Novel neutralization techniques
  - Directed Energy
  - UAS-borne
  - Biological, Chemical
  - Non-kinetic
  - “Magic”

We’re looking to expand our current neutralization capability.

To Summarize, in Summary…

- What we told you
  - Improvised threats are still a major concern
  - We'd like to be able to neutralize them
    - "Neutralize" is very context/scenario dependent
    - It's a hard problem (what with physics and all that)

- What we're telling you
  - We have capability; we want more (and "better")!
  - Open to and interested in novel techniques
  - We need help from you (information, technology)

We have to continue to improve our capability esp. as threats evolve

Any Questions?

"I love it when a plan comes together."

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JIDO'S ROLE IN THE IMPROVISED THREAT ENVIRONMENT

LTG Michael Shields

Overall Classification: Unclassified

Helping Warfighters adapt

History of Supporting the Warfighter

Handheld Detection Systems

Advanced Optics

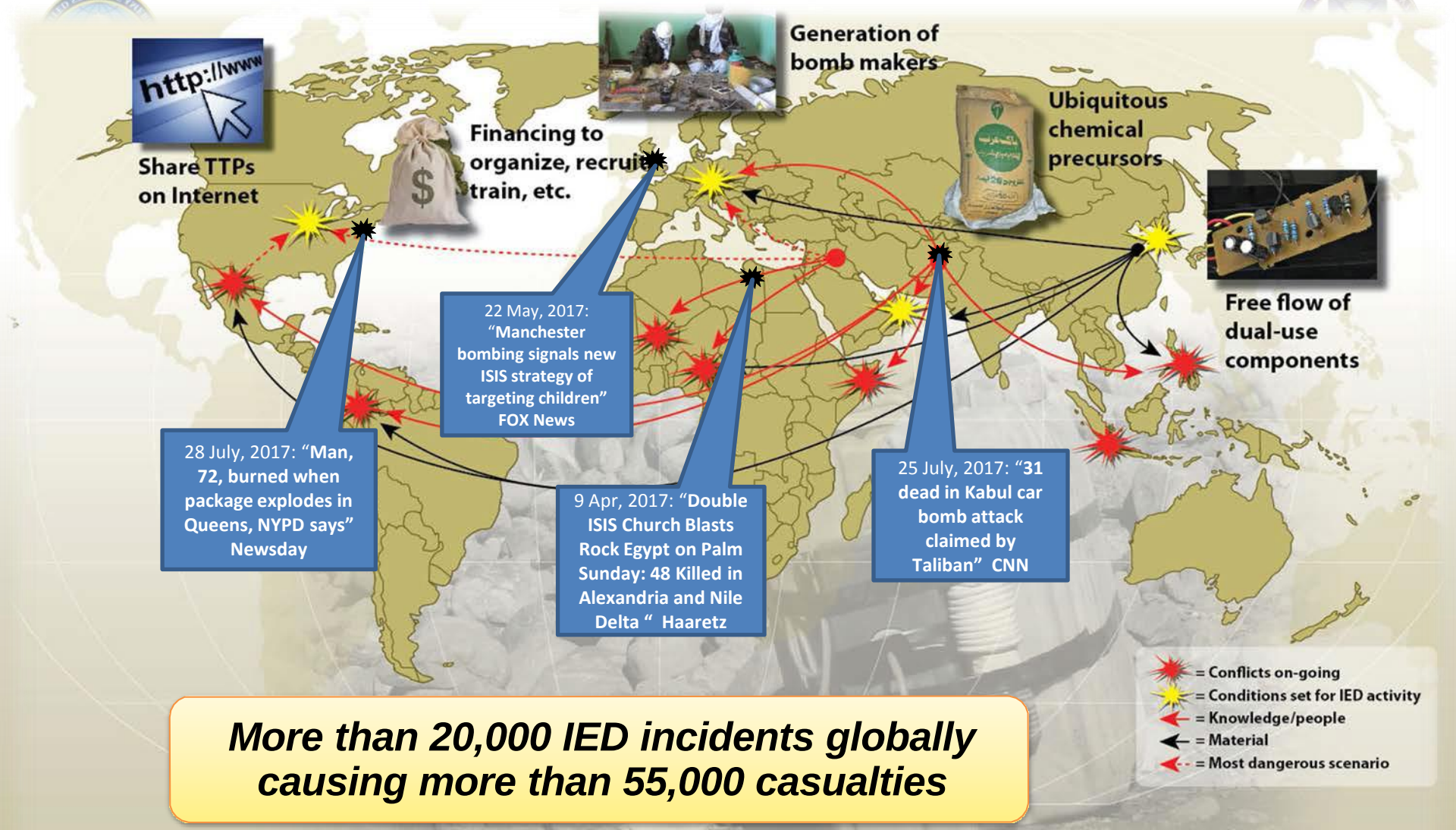
Dismounted CREW Systems

Tactical Robotics

Vehicle-Mounted CREW

Catapult – Attack the Network Toolset

An Enduring Global Threat



More than 20,000 IED incidents globally causing more than 55,000 casualties

Know Your Enemy

ISIS UAS Video

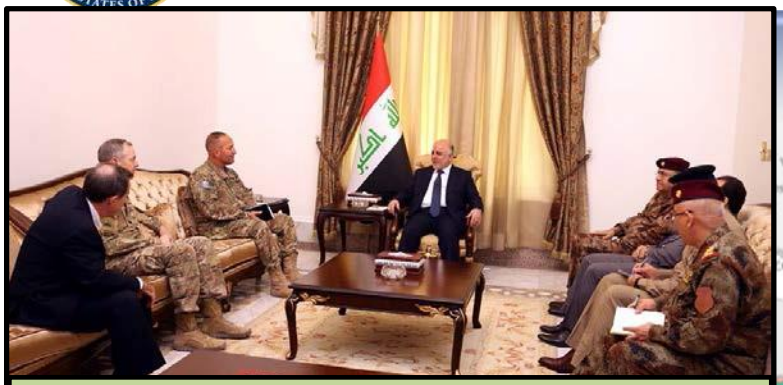
https://www.youtube.com/watch?v=GI7-t93CYag
Compilation of videos of UAS dropping explosives (1:00 for tank video)

http://heavy.com/news/2017/01/new-isis-islamic-state-video-knights-of-bureaucracy-mosul-iraq-wilayat-ninawa-modified-weaponized-drones-bombings-airstrikes-uncensored-video/

Start at around the 32:34 point and end it around the 35:00 minute point.

UAS Videos

JIDO Support to Iraq & Afghanistan



LTG Shields meets with the Iraqi PM

Iraqi Army soldier using a handheld detector

ANA training on dismounted search methods

ANA EOD Technician checking his EOD kit

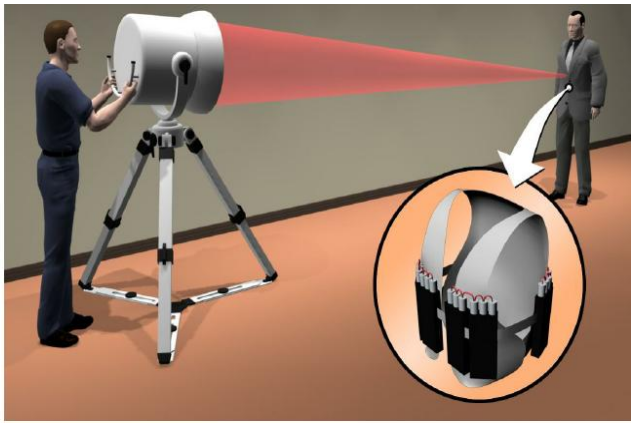
Partners

JIDO Technology Outreach Partners

US Government	DHS S&T I2WD SOFWERX CTTSO SOCOM AWG RRTO REF
Industry	NDIA H4D IN-Q-TEL MASS Challenge DIUx AFCEA MITRE Raytheon
Labs and Academia	MIT LL STANFORD JMU Georgetown JHU APL FSU CMU GTRI
International	NATO Defence S&T Lab-UK FVEY Heads of Delegation International C-IED Steering Committee

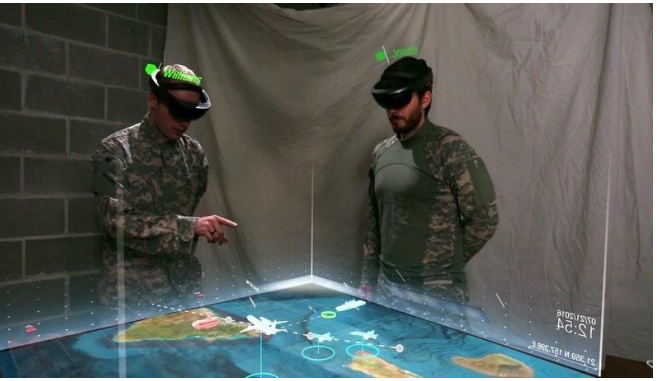
Current Efforts

Counter small UAS



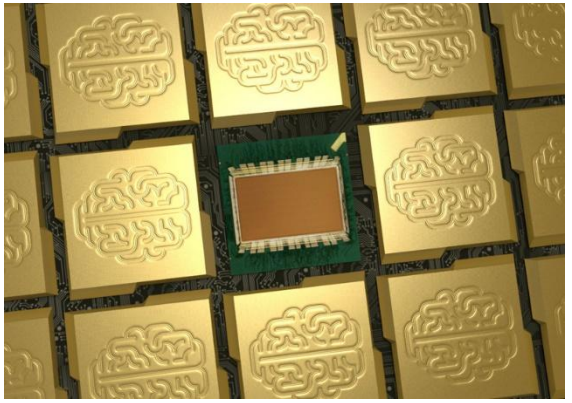
Standoff Detection

Advanced EW



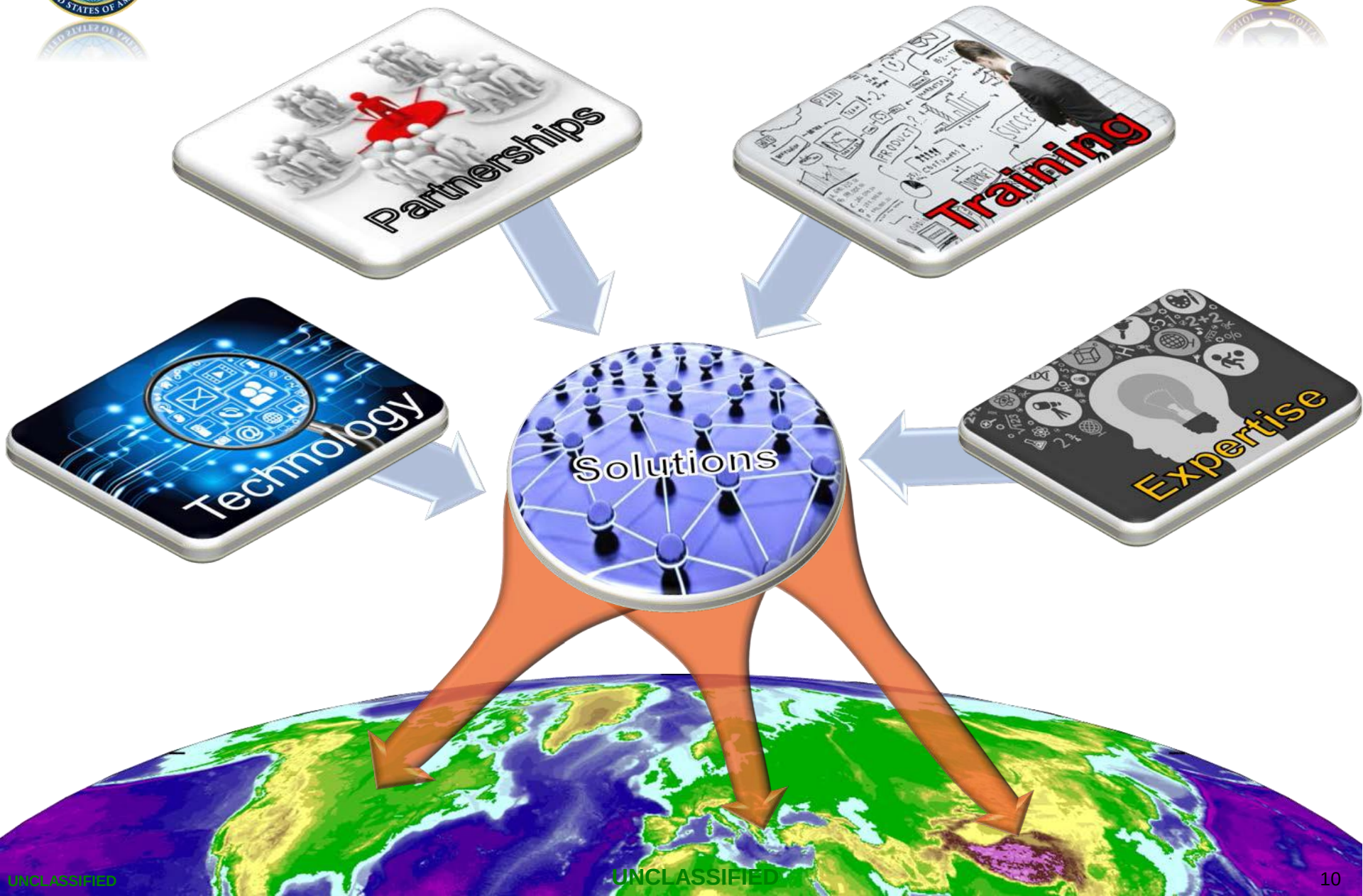
Augmented/Virtual Reality

Material Exploitation



Artificial Intelligence/Machine Learning

Solutions to the Warfighter



UNCLASSIFIED

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Joint Improvised-Threat Defeat Organization

Global EOD Symposium and Exhibition

8 August 2017

Ms. Lisa Swan

Director, Material Solutions

HELPING WARFIGHTERS ADAPT

JOINT IMPROVISED-THREAT DEFEAT ORGANIZATION

VBIED Surveillance Video

https://www.youtube.com/watch?v=oPqH4SUNPh4

Vehicle Borne IED, Kabul, Afghanistan

Vehicle Borne IED, Kabul, Afghanistan

vbied kabul may 2017 surveillance camera

Exclusive Footage Shows Moment Kabul Truck Bomb Explodes

TOLOnews

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80,876 views

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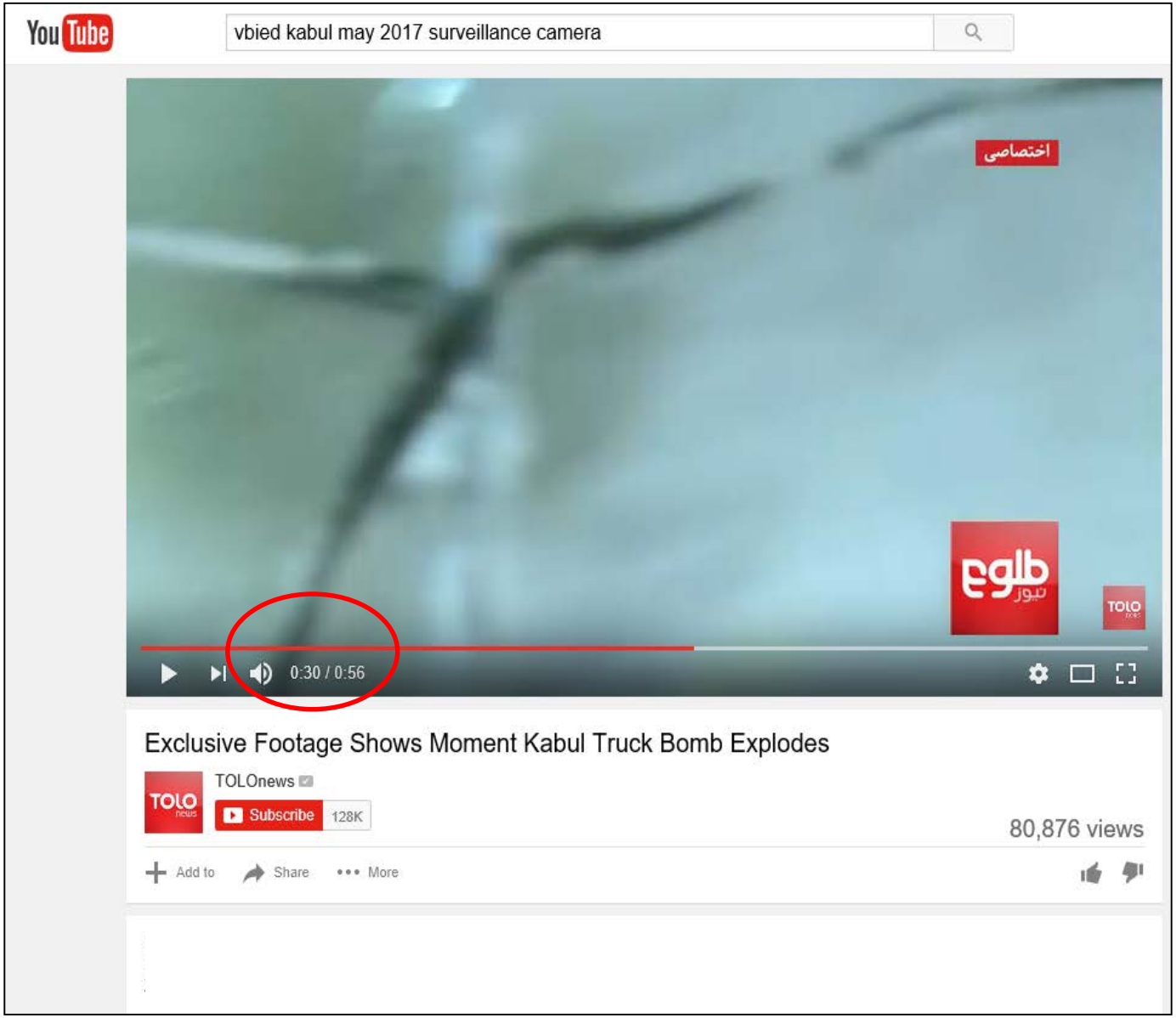
Vehicle Borne IED, Kabul, Afghanistan

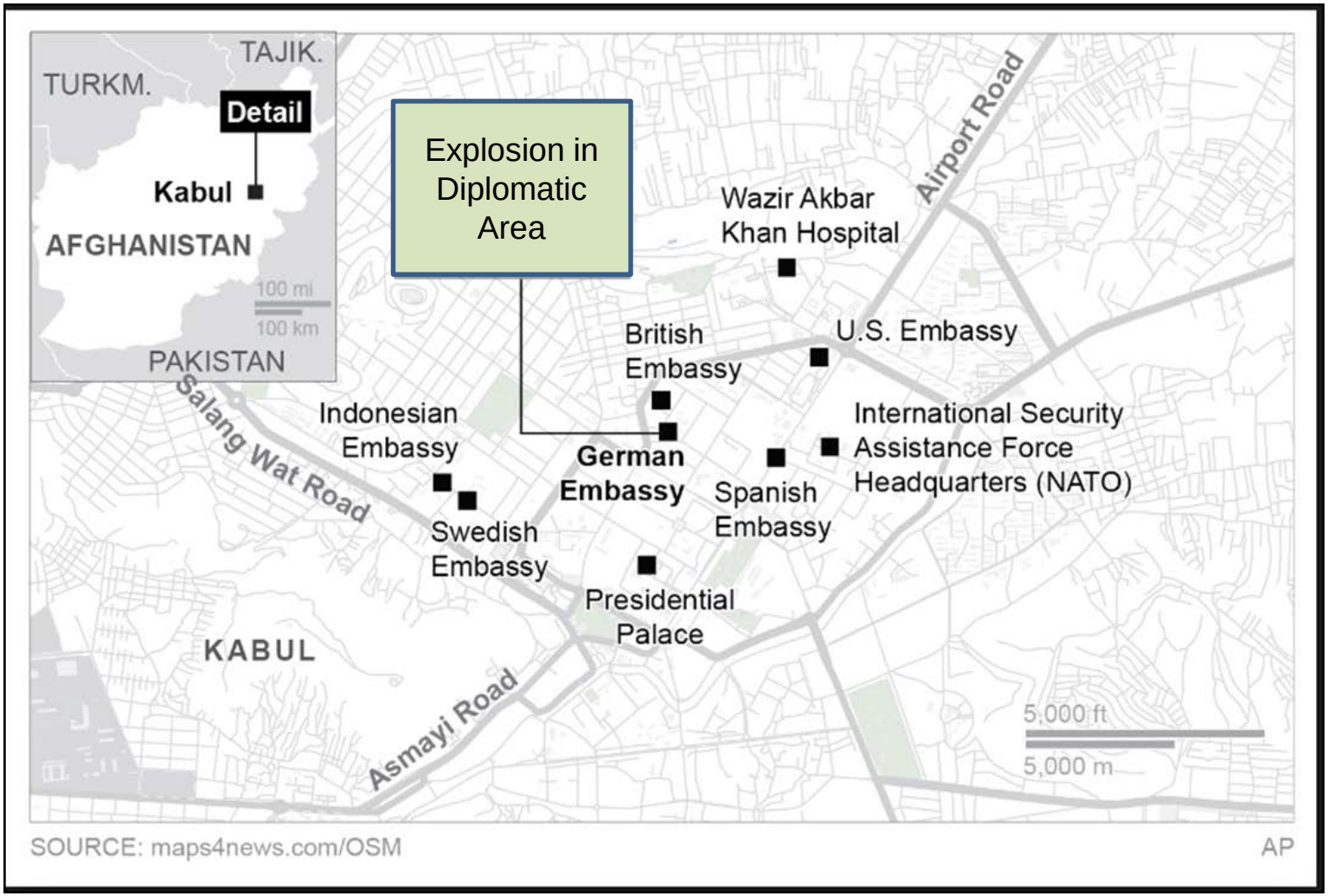


Vehicle Borne IED, Kabul, Afghanistan

The German Embassy in Kabul after the explosion. It was not clear whether the embassy had been targeted. Rahmat Gul/Associated Press

Vehicle Borne IED, Kabul, Afghanistan

Vehicle Borne IED, Kabul, Afghanistan



Person-Borne IED, Quetta, Pakistan

ISIS claimed responsibility for the bombing. The group's Amaq news agency said a bomber wearing an explosive vest carried out the attack, which was condemned by a former local ISIS affiliate.

Security officers collect evidence as they investigate crime scene after a bomb exploded next to a convoy of deputy chairman of the Pakistan Senate, Senator Ghafoor Haideri in Mastung, Pakistan, May 12, 2017. REUTERS/Naseer Ahmed

25 killed by suicide bomber in Pakistan, ISIS claims responsibility

May 12, 2017 | Filed under: Asia Pacific, Featured, International, News | Posted By MV Media

JIDO Core Functions

- **Assist Situational Understanding (of threat network activities)**

  Delivers consumable fused intelligence to help warfighters plan for and adapt to rapidly changing threat conditions.

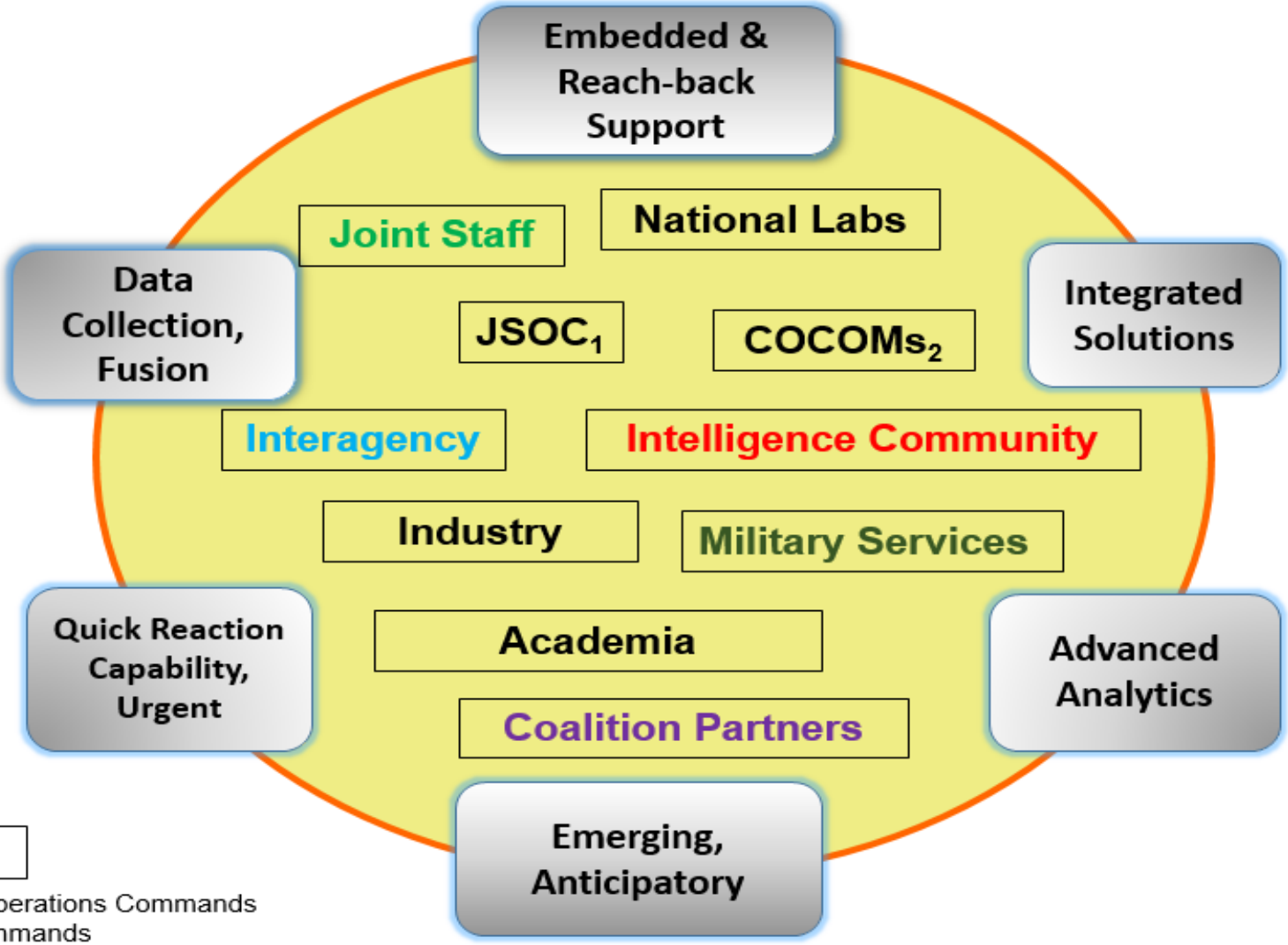
- **Enable Rapid Capability Delivery**

  Provides the ability to **rapidly acquire and deliver** urgent and emergent **counter-threat** materiel **solutions**.

- **Enable DoD Responses to Improvised Weapons**

  Leverages the authorities, access, and capabilities of all US government agencies, intelligence community, coalition partners, industry, and academia to develop and deliver solutions to counter improvised threats.

JIDO: Actions & Collaborators



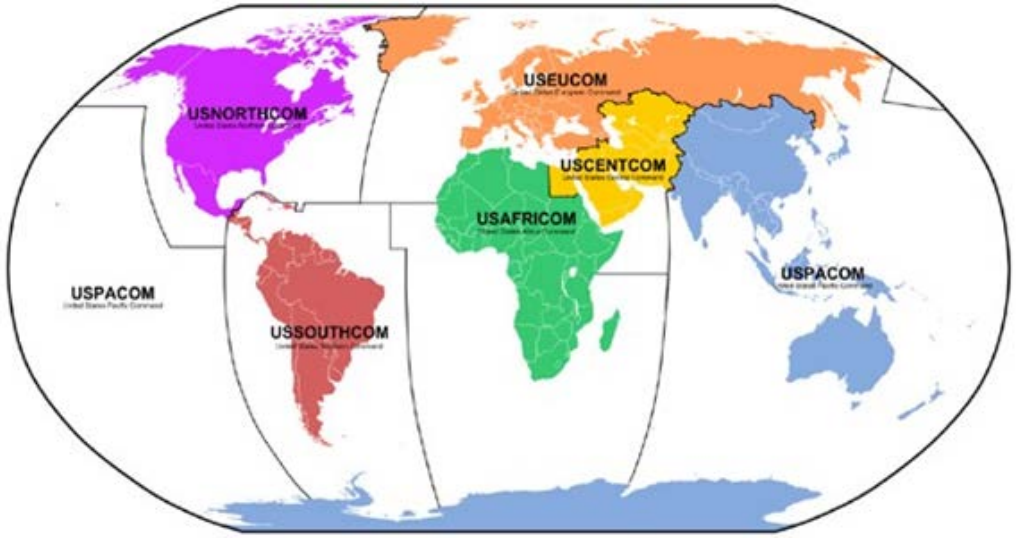
Key

Actions

Collaborators

1. Joint Special Operations Commands
2. Combatant Commands

JIDO Technology Outreach Framework



Identify Needs

- Requests from the Warfighter
- Technology gaps
- Emerging threat technologies

Find Solutions — 1 – 3 years

- Broad Area Announcements (BAA)
- Tech scouting
- Partnered programs

Rapid Delivery — < 1 – 2 years

- Deliver a product within 2 years
- Incremental or innovative solutions

JIDO Focus Areas

Standoff Detection

Counter Vehicle Borne IEDs

Subterranean Void Detection & Defeat

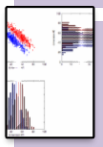
Miniaturization & integration of sensors

Electronic Counter Measures for advanced wireless signals & techniques

Processing Exploitation Dissemination (PED) for integrated sensors

Vehicle attached IEDs

Virtual Advise and Assist



Data Analytics

Situational Understanding in A2AD environments

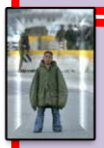
Remote neutralization of HME and pre-cursors

Pre-detonation capabilities

Identifying explosive threats within structures

Counter-Unmanned Aerial Systems methods

Safeguarding GPS functionality



Person-Borne IEDs (PBIEDs)

Anti-armor IED detect & defeat

Mounted detection for dismounts that enable rate of advance

Future capabilities must be:

Scalable – Affordable – Adaptable – Expeditionary – Domestic Application – Whole-of-Government Approach

One Example

- Multiple Technologies
- Many Partners
- Proof of concept testing
- Initial capability delivery 2018

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News

At least 26 killed in Lahore Taliban suicide blast that targeted police

Egyptian tank crew 'saves 50 people' from deadly suicide bomb by CRUSHING car packed with 200lbs of explosives

- The tank spotted the car racing towards a checkpoint in North Sinai
- It drove out head-on to meet the car full of terrorists and ran straight over them
- An army spokesperson said seven people were killed by the subsequent blast
- But they added that up to 50 were saved by the actions of the brave tank

By LUKE BARNES FOR MAILONLINE
PUBLISHED: 14:15 EDT, 25 July 2017 | **UPDATED:** 03:59 EDT, 26 July 2017

As the tank retreated the car exploded in a huge ball of flame, sending a shockwave rippling through the desert. Tragically seven civilians - including two children - were reported to have died

WORLDWIDE IED EVENTS

Taliban Claims Responsibility for Deadly Kabul Suicide Bomb Attack
Associated Press, July 24
The Taliban claimed responsibility for a suicide car bombing in the Afghan capital of Kabul that killed 24 people and wounded 42 others.

Massive car bombing targets large Al-Qaeda gathering in Idlib
AMN Al-Masdar News, July 24
A car bombing targeted a large gathering of Hay'at Tahrir Al-Sham fighters in Idlib City.

Three dead, 15 injured in suicide bomb attack on IDPs camp
The Guardian, July 24
Three people died and 15 others were injured in a suicide bomb attack in Maiduguri.

Two Peshmerga fighters wounded in IED explosion in western Diyala
Iraqi News, July 24
Two Peshmerga fighters were injured when an IED exploded near their patrol in western Diyala.

Car bomb blast in Raqqa leaves casualties among SDF ranks
Iraqi News, July 24
Ten members of the Syrian Democratic Forces were killed in a car bomb blast south of Raqqa.

Policemen, among others, killed and injured in blast, western Mosul
Iraqi News, July 24
Seven people were killed and injured in a blast caused by a booby-trapped vehicle in western Mosul.

Army officer killed in bomb blast, western Anbar: Military source
Iraqi News, July 24
An Iraqi army officer was killed in an IED blast while defusing the bomb in western Anbar.

Army troops foil NPA attack in Ilocos Sur; 1 rebel killed
Manila Bulletin, July 24
In Manila, rebels were planning to set up an IED in a populated area.

WORLD, MIDDLE EAST

Roadside mine blast kills 2 in Afghanistan's Zabul province

ANI
Published Jul 31, 2017, 2:03 pm IST Updated Jul 31, 2017, 2:03 pm IST

sky NEWS .COM.AU ▸ Top Stories ▸ National ▸ Local ▸ World ▸ Politics

NEWS ▸ WORLD ▸ MIDDLE EAST

Suicide bomb detonated near Iraqi embassy

Updated: 10:42 pm, Monday, 31 July 2017

JOINT IMPROVISED-THREAT DEFEAT ORGANIZATION
APTO AUT MORIOR

EOD WARRIOR FOUNDATION

Ken Falke
Chairman
USN EOD Retired

EOD Warrior Foundation Vision

To *inspire* hope and

***guide* the EOD Family to thrive.**

EOD Warrior Foundation Mission

Improve the quality of life for the EOD family by providing emergency financial relief, scholarship opportunities, physical, social, and emotional support.

Four Pillars of Support

I. Emergency Financial Relief

- Grant Committee of Board Members
- Case by case
- Grants not loans
- 2016 - $335,844
- 2015 - $177,420
- 2014 - $296,769
- 2013 - $330,997

Four Pillars of Support

I. Emergency Financial Relief

II. Education

- Scholarships; tuition, and books
- Gold Star, Wounded Warrior, Dependents
- 2016 - $202,217
- 2015 - $172,000
- 2014 - $140,000
- 2013 - $95,000

Four Pillars of Support

I. Emergency Financial Relief

II. Education

III. Hope and Wellness

- Therapeutic healing retreats, mentoring, peer support
- EOD Techs, Gold Star Parents and Widows, Caregivers, EOD Couples, family events
- 2016 - $250,208 – Over 144 at retreats & family events
- 2015 - $209,294 - Over 225 at retreats & family events
- 2014 - $160,407 - Over 150 at retreats & family events
- 2013 - $43,888 –

Four Pillars of Support

I. Emergency Financial Relief

II. Education

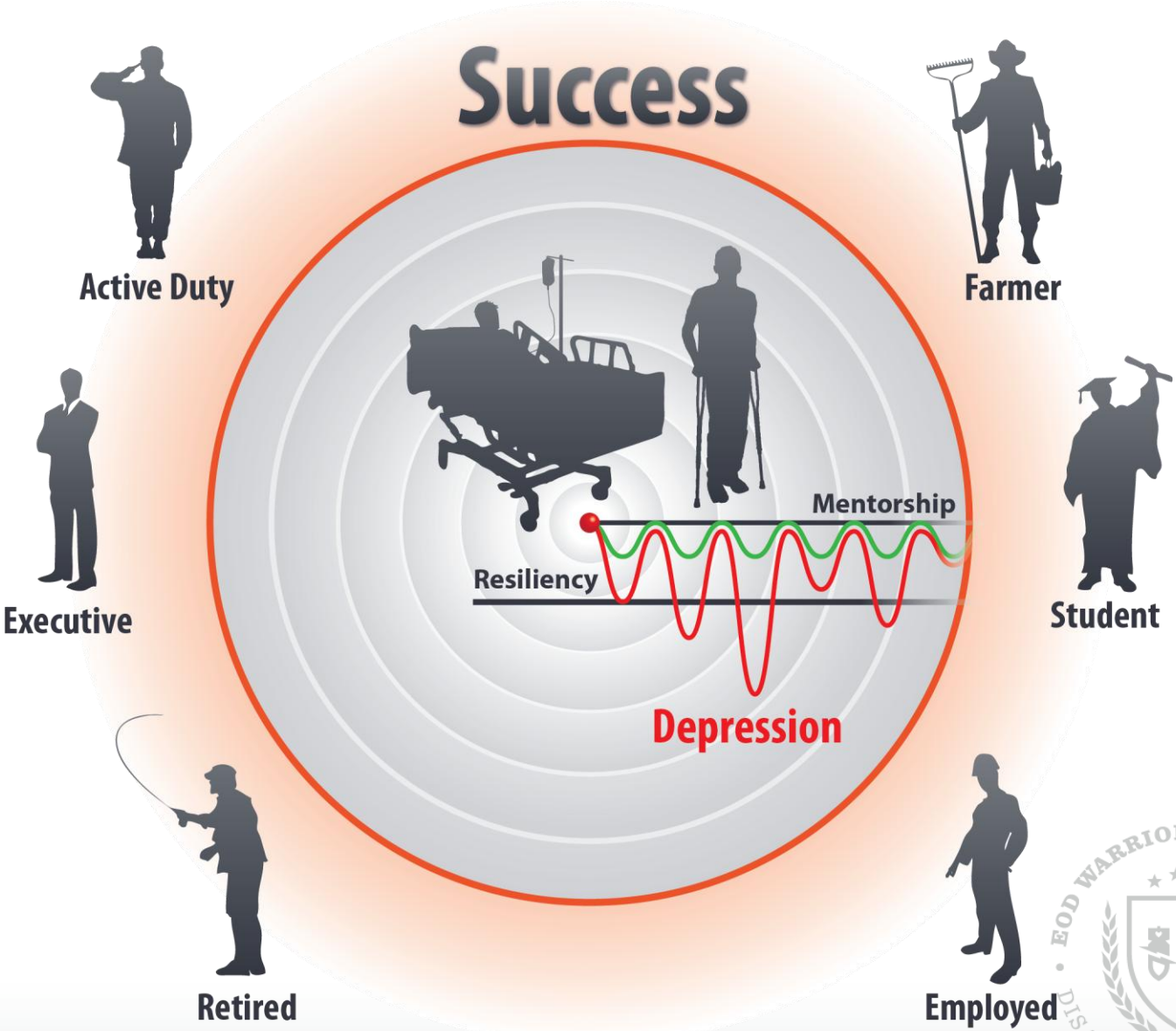
III. Hope and Wellness

IV. EOD Memorial Care

- Provided by Contract, NAVSCOLEOD, Volunteer
- 2016 - $39,129
- 2015 - $27,420
- 2014 - $24,788
- 2013 - $12,228

Four Important Questions

1. What's the problem?
2. What’s the fix?
3. How do we fund or assist?
4. Donor acceptance


Success
Active Duty
Farmer
Executive
Student
Mentorship
Resiliency
Depression
Retired
Employed
EOD WARRIOR FOUNDATION
DISARMING CHALLENGES

Services

EOD WARRIOR FOUNDATION
DISARMING CHALLENGES

Donors and Funding

EOD WARRIOR FOUNDATION
DISARMING CHALLENGES

EOD Memorial

EOD Memorial Enhancements

- Streaming Ceremony
- Virtual Memorial
- Virtual Cemetery Locations
- Interactive Brick location
- Examining Memorial Expansion - History

2017 and Beyond

- Possible Memorial Expansion
- White Star Family Support
- Gold Star Sibling Support
- Suicide Prevention Awareness and Training
- Transcendental Meditation Scholarships
- Retreats

Upcoming Scheduled Events

- EOD Warrior Gulf Coast Rides
- 4-6 May 18 – 50th Annual EOD Memorial Ball
  - Events (Golf Tournament, Crawfish Boil, Auction, Memorial Ceremony, Memorial Ball)
- GESE – Aug 2018 and beyond
  - Partnership with NDIA
- US/UK Ball – 2018
- Local events across the country

Foundation Paid Staff

Nicole Motsek - Executive Director
Sherri Beck – Program Coordinator

Melissa Tackitt – EOD Memorial Care and Events Coordinator

Mike Mack – EOD Family Caseworker

Lauren Walls – Events and Engagement Coordinator

Len Gee – Fundraising Specialist

Foundation Leadership

Board of Directors

Chairman – Ken Falke, USN EOD Retired

Executive Director – Nicole Motsek, Wife of former Army EOD

Director – Tosha Sprovstoff, Gold Star Wife

Director – Andrea Fulling, Wife of Wounded Warrior

Director – Christina Kazakavage, Gold Star Mother

Director – Greg K. Mittelman, USAF EOD Retired

Director – Kellie Perry, Wife of USN EOD Retired

Director – Paul Plemmons, USA EOD Retired

Director – Adam Popp, USAF EOD Wounded Warrior Retired

Director – Rob Sehnert, USN EOD Retired

Director – Frank Morneau, USN EOD Retired

Director – Bob Busby, Treasurer

Director – Jane Gingrich, Financial Advisor

Director – Rod Simmons General Counsel

Foundation Leadership

Honorary Board Members

The Honorable Sue Payton

Major General Randy Manner, USA, Retired

Major General Gordon C. Nash, USMC, Retired

Rear Admiral Archer M. Macy, USN, Retired

Major General Timothy Byers, USAF, Retired

Ambassadors

FOUNDATION FOR DISARMING CHALLENGES

Contacts

Website:

www.eodwarriorfoundation.org

Facebook:

EOD Warrior Foundation

Address:

701 E. John Sims Pkwy, Suite 305

Niceville, FL

32578

Phone:

850-729-2336 – Local Office

CFC: #37190

Thank You

It is the generosity of others that allows us to assist in

“Disarming Challenges”

for EOD Warriors and their Families.

God Bless our Troops and Families!

EOD WARRIOR
FOUNDATION

Ken Falke
USN EOD Retired
EODWF, Chairman

Joey Ferguson
USMC EOD Retired

Asia Pacific C-IED Fusion Center

GESE 17 Update

COL Gerardo Meneses, Director

Agenda

- APCFC Evolution
- Asia-Pacific IED Threat Overview
- Core Functions
- Regional Impacts
- Value
- Discussion

Evolution of the APCFC

Recognition of Enduring IED Threat

APCFC Established

APCFC CONPLAN Approved

APCFC Made Permanent

2010 2011 2012 2013 2014 2015 2016 2017 2018

Prepare U.S. Forces to Deploy

Respond to USPACOM Threat

Build Partner Capacity

Collaborate w/ Allies & Partners

Anticipate Emerging Threats

Deploying U.S. Soldiers receive C-IED Training

Soldiers from Bangladesh receive C-IED training

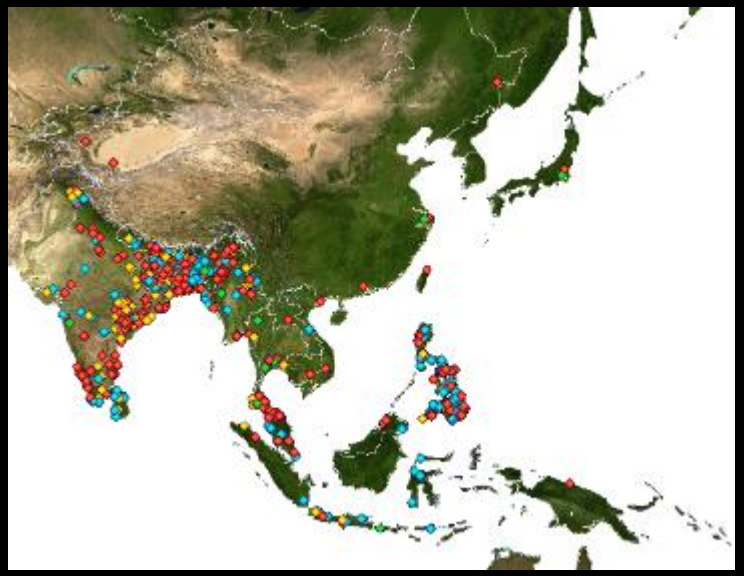
Global Threat, Global Response

USPACOM lead for Synchronizing C-IED and Counter Asymmetric Threat Efforts

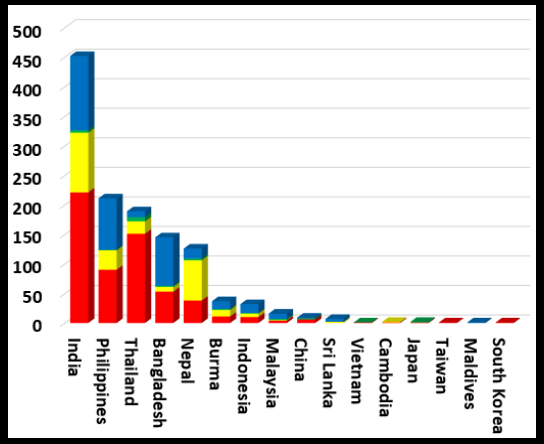
Asia-Pacific IED Threat Overview

U.S. ARMY PACIFIC

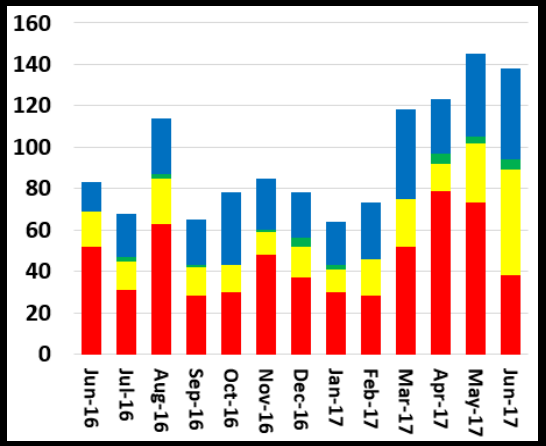
One Year Overview of IED Events by Type



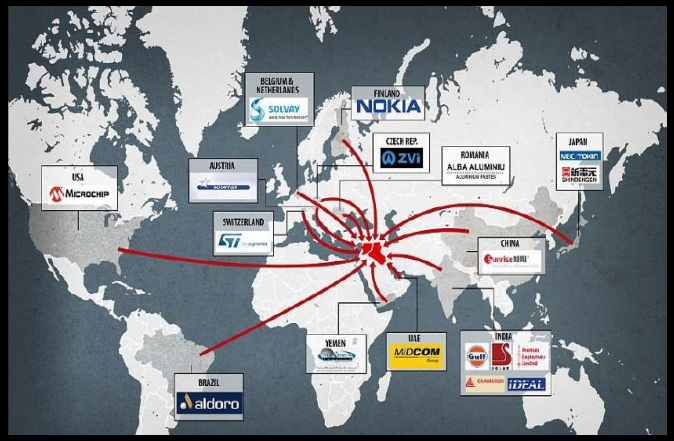
Past Year IED Events by Country



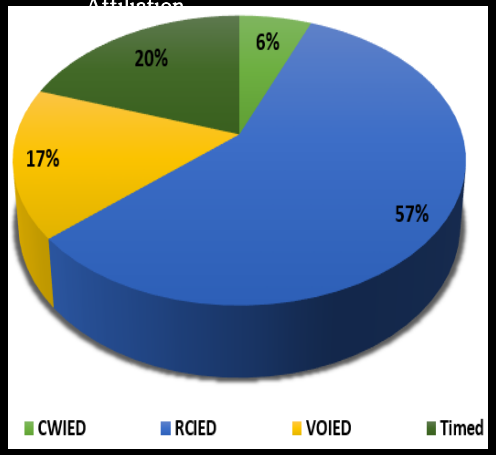
Past Year IED Events by Type



Foreign Fighter & Dual-use Components

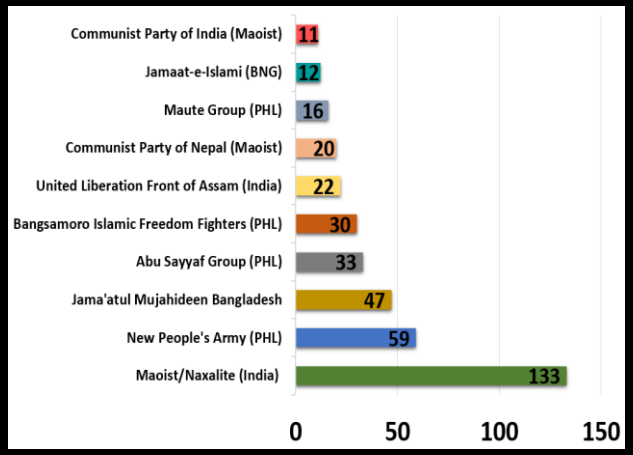


Known Switch Type

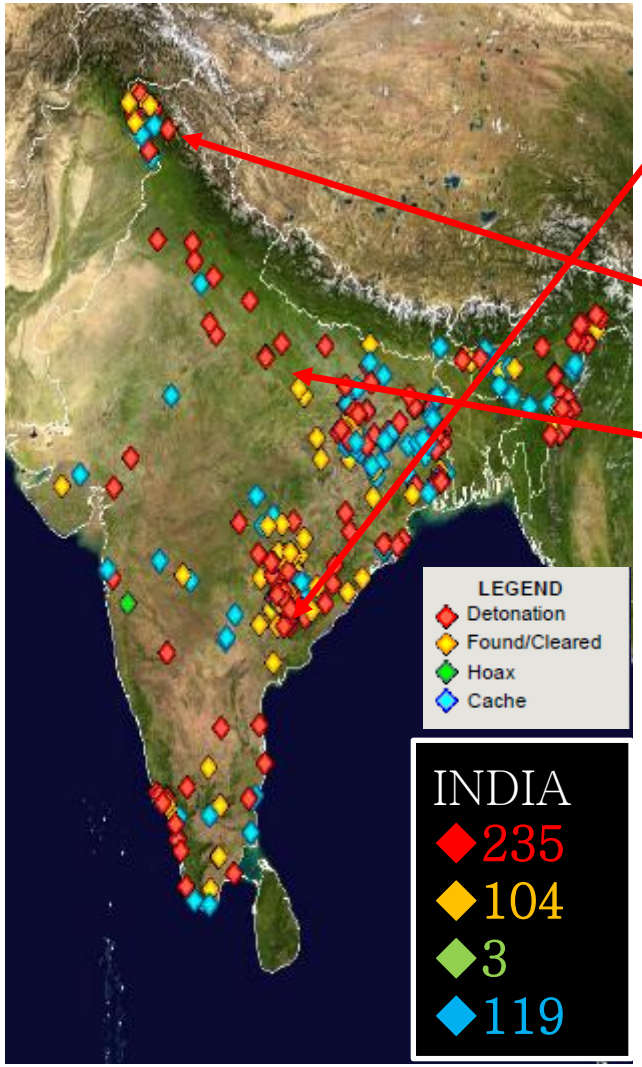


Past Year IED Activity

Known Group



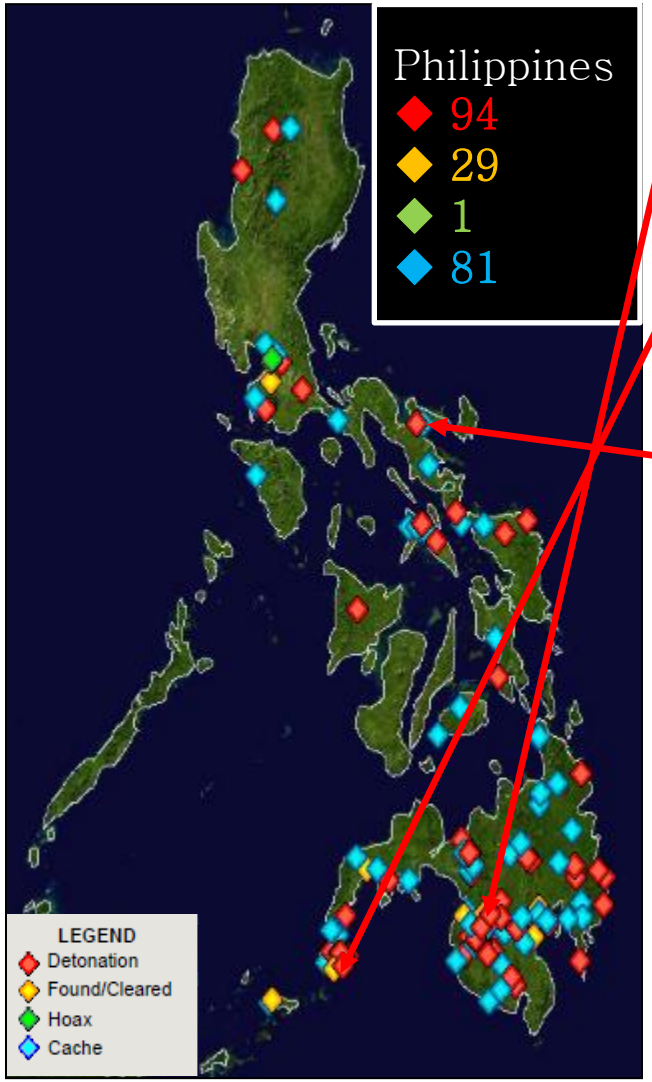
India Overview



RECENT SIGNIFICANT ACTIVITY

- On 11 Mar, six detonated IEDs and seven undetonated IEDs were recovered
- On 16 May, an IED detonated against a former Special Police Officer
- On 26 May, over the course of a week, 700 “crude bomb” IEDs were recovered by security forces

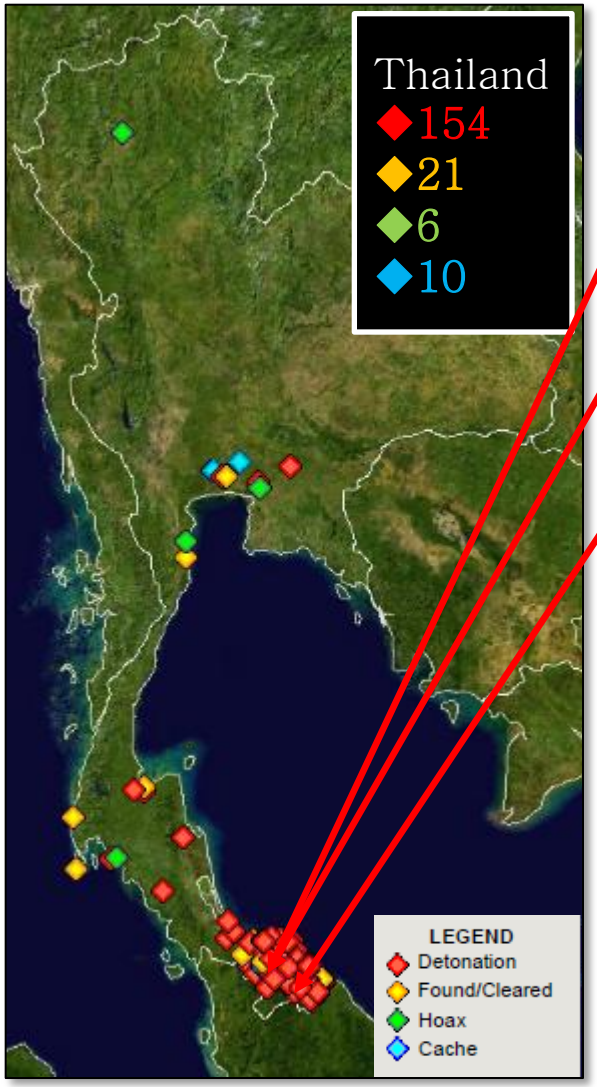
Philippines Overview



RECENT SIGNIFICANT ACTIVITY

- On 6 MAY, two IEDs detonated near a mosque in Quiapo district, Manila
- On 11 MAY, security forces evaded several IEDs, recovered three IEDs, and recovered a cache from an ASG encampment
- On 29 MAY, an IED detonated by NPA rebels against troops

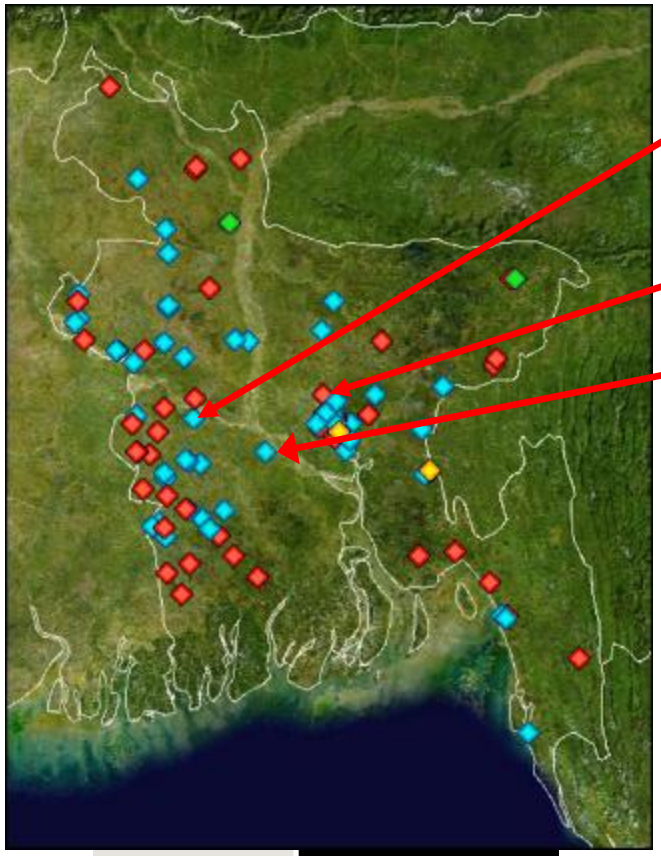
Thailand Overview



RECENT SIGNIFICANT ACTIVITY

- On 3 APR, IEDs detonated during a complex attack on a local police checkpoint by Runda Kumpulan Kecil (RKK) militants
- On 7 APR, IEDs detonated against power poles across Pattani, Yala, Narathiwat, and Songkla
- On 27 APR, an IED detonated roadside by BRN insurgents against an RTA mounted patrol in Ri-ngae, Janae, Narathiwat.

Bangladesh Overview

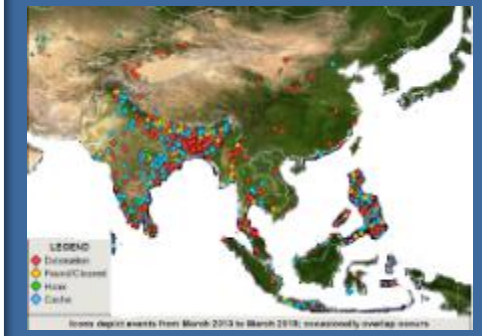


RECENT SIGNIFICANT ACTIVITY

- On 6 MAY, an IED cache was recovered following "Operation Subtle Split"
- On 7 MAY, a PBIED detonated during a raid on a militant hideout
- On 27 MAY, nine unknown explosions and an IED cache was recovered during a raid on a militant hideout

APCFC Core Functions

Irregular Warfare Analysis



Enduring & Evolving Threat

- Publish Monthly IED Update
- Conduct all-source IED analysis
- Share Identity Intelligence

Identity Activities

Forensics Training 500th MI

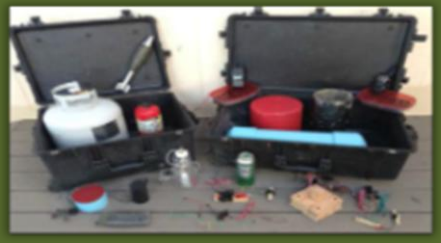
- Build Biometric and Forensic Capability
- Provide Collaborative Exploitation Framework
- Socialize USARPAC Forensic Exploitation Laboratory (FXL)
- Current nominations ~5 submitted monthly

Fusion

Training Program

- Train C-IED Master Trainers
- Tailor curriculum to latest Asia-Pacific IED threats
- Fabricate training devices to match Asia-Pacific IEDs

C-IED Training with 3-21 IN BN at FWAK



USPACOM IED Fabrication Kit

Partner Nation Engagement

- Partner with nations to develop C-IED capability
- Participate in regional security cooperation events
- Conduct C-IED interoperability reviews

Dismounted Visual Indicator Lane during GARUDA SHIELD 2016

C-IED SMEE with PA to develop multi-year C-IED roadmap

Explosive Ordnance Disposal

- Very Important Person Protection Support Activity/ USSS
- Defense Personnel Accountability Agency support
- Expert Academic Exchanges with Allied Partner Nations
- Defense Support to Civil Authorities

Regional Impacts

Threat Visibility and Information Sharing

- Increased PACOM and DoD Threat Awareness
- Shared FVEY and Interagency understanding of VEOs, IEDs, UAS and Emerging Threats

Counterterrorism Support

- Increased Homeland Defense, Force Protection and Regional Security
- Illuminated Threat
- Improved Targeting

Readiness

- Increased USARPAC and III MEF C-IED training capacity via T3
- State Partnership Program units better prepared for USPACOM operations
- Standard C-IED POI for Allies and Partners

Regional Security and Stability

- Bangladesh developing a fusion center by 2020
- Sri Lanka developing regional HMA/C-IED center by 2022
- Enduring C-IED programs in PI, MYS, THA

US, Allied, and Partner Nation forces prepared to counter emerging IED threats (READINESS), established IED common operating picture (THREAT SHARING & VISIBILITY), and increased interoperability resulting in regional SECURITY & STABILITY

APCFC Value Proposition

64 PAX
- **10 MIL**
- **9 DAC**
- **38 CME**
- **7 BMM**

Distributed at Ft. Shafter, PACOM JIOC, Schofield Barracks, HI; FWA and JBER, AK; JBLM, WA; and ROK

Provide →

- **Irregular Warfare Threat Analysis**
- **EOD & C-IED Planning and Training**
- **PN C-IED Capacity Building**
- **Identity Activities**
- **OPCON of PACOM Forensics Exploitation Lab**

Increases →

- **Enduring Relationships**
- **Access**
- **COE / Threat Understanding**
- **Interoperability**

Mitigates →

- **Reduced Inter-agency Collaboration**
- **Inadequate Regional C-IED Capacity**
- **Lost IED Threat Awareness**
- **Reduced Training Relevancy**
- **Delayed C-IED Task Force Capability in Event of Contingency Operations**

At this cost →

$9.68M / FY
- **$8.34M Contract**
- **$1M DAC Salaries**
- **$.34M MIL Ops/Sust**

Theater Impact			
Regional Security & Stability	Threat Visibility & Info Sharing	Readiness – Army & Beyond	Counterterrorism Support

Discussion/Questions?

Contact Information:

Email: usarmy.shafter.usarpac.list.apcfc-requests@mail.mil
Website: http://www.usarpac.army.mil/apcied/

Golden West
HUMANITARIAN FOUNDATION

NGO's and HMA

IEDs and HMA: Meeting the changing threat

NGOs and CIED Operations
The nature of the changing threat

- Iraq and Syria have experienced massive use of IEDs by IS.
- Militaries, generally cannot and will not clear IEDs in civilian communities outside requirements of military operations.
- Out of necessity, Contractors and NGOs are filling the gap, eliminating IEDs threatening infrastructure and preventing people from resuming normal lives.

NGOs and CIED Operations
The nature of the changing threat

- Lack of clear standards for training, equipping, operations, and land release, hinder operations and enable a confusing variety of approaches, by a wide spectrum of NGOs.
- NGOs on this spectrum range from highly specialized, expert Explosive Ordnance Disposal training and technology organizations, to collections of well-meaning, but poorly trained people, essentially doing OJT in a lethal environment.

NGOs and CIED Operations
- Recommendations -

- Development of international standards for CIED operations for NGOs or Contractors, similar to IMAS and IATG.
- International standards should address: Coordination for CIED, Training for CIED operations, Equipping for CIED operations, SOP development for CIED operations, and consideration of land hand-over and liability issues

Distribution Statement A: Approved for public release, distribution is unlimited.

DTRA Test Science and Technology Department

Programs and Enabling Capabilities

Department Chief

Gary L. Hook, Ph.D.

Senior Technical Director

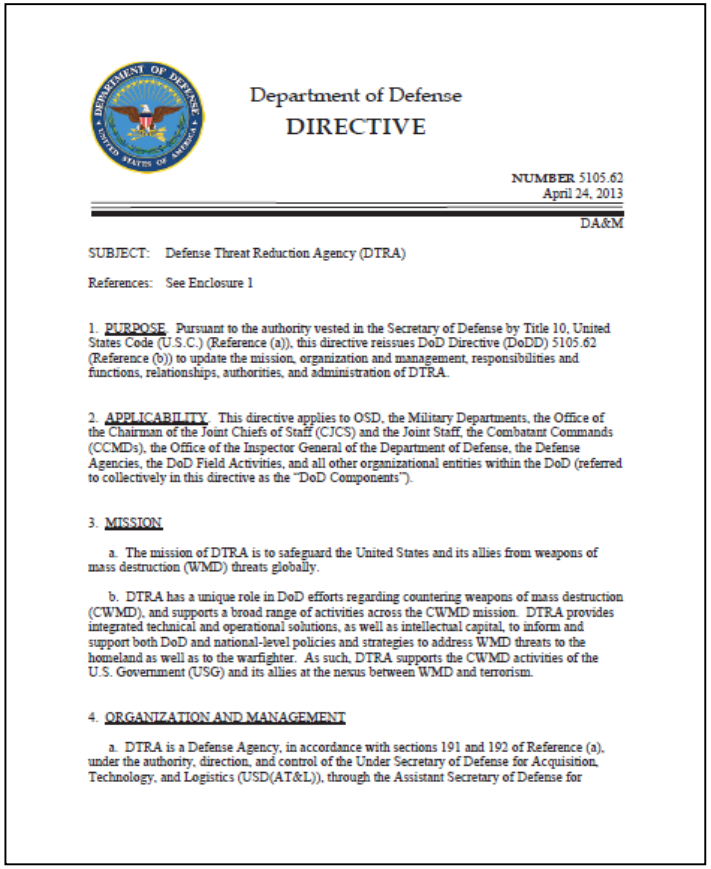
Phillip J. Cole, Ph.D., PMP®

July 13, 2017

DTRA RDT&E – OSD Mandate

DoDD 5105.62 – DTRA Director:

- **Manages and oversees *DTRA research, development, test, and evaluation (RDT&E)* and acquisition needed to support DoD mission areas in support of DoDD 2060.02 (DoD Combating Weapons of Mass Destruction (WMD) Policy), which states the ATSD(NCB), under the USD(AT&L), shall oversee DTRA in the management of *RDT&E needed to counter the threat and use of WMD…***
- **Researches and develops technologies to *maintain readiness* to conduct effects experiments, including those needed if *underground nuclear weapons testing* is resumed**
- **Researches, develops, and *evaluates advanced weapons* and their *lethal or collateral effects*, including *analysis of delivery options* and *weapon/target interaction*, against the spectrum of *WMD-related targets***



Department of Defense
DIRECTIVE

NUMBER 5105.62
April 24, 2013

DA&M

SUBJECT: Defense Threat Reduction Agency (DTRA)

References: See Enclosure 1

1. PURPOSE. Pursuant to the authority vested in the Secretary of Defense by Title 10, United States Code (U.S.C.) (Reference (a)), this directive reissues DoD Directive (DoDD) 5105.62 (Reference (b)) to update the mission, organization and management, responsibilities and functions, relationships, authorities, and administration of DTRA.

2. APPLICABILITY. This directive applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff (CJCS) and the Joint Staff, the Combatant Commands (CCMDs), the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this directive as the "DoD Components").

3. MISSION

a. The mission of DTRA is to safeguard the United States and its allies from weapons of mass destruction (WMD) threats globally.

b. DTRA has a unique role in DoD efforts regarding countering weapons of mass destruction (CWMD), and supports a broad range of activities across the CWMD mission. DTRA provides integrated technical and operational solutions, as well as intellectual capital, to inform and support both DoD and national-level policies and strategies to address WMD threats to the homeland as well as to the warfighter. As such, DTRA supports the CWMD activities of the U.S. Government (USG) and its allies at the nexus between WMD and terrorism.

4. ORGANIZATION AND MANAGEMENT

a. DTRA is a Defense Agency, in accordance with sections 191 and 192 of Reference (a), under the authority, direction, and control of the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)), through the Assistant Secretary of Defense for

DTRA J9 Strategic Plan: J9TS Tasks

- **DTRA J9 provides a unique National testing capability for simulated WMD facility characterization, weapon-target interactions, WMD facility defeat, and asymmetric threat defeat**
  - Conduct operationally-relevant test and evaluation supporting development of CWMD capabilities and technologies, including detection, tracking, and defeat systems and weapons, as well as tactics, techniques and procedures
  - Provide end-to-end test and construction program management, oversee construction and fielding activities, plan and direct test execution events, and ensure the collection and reporting of critical test data
  - Provide state-of-the-art instrumentation support, including engineering expertise for instrumentation plans and diagnostics tools
  - Provide research, studies, and test science support for RDT&E of CWMD systems and technologies, special weapons effects, survivable structures and systems, and treaty verification technologies
  - Use robust processes to provide test event planning, management, and execution, data analyses, and testbed/test article management that supports test objectives for DTRA and other DoD and U.S. Government agency customers.

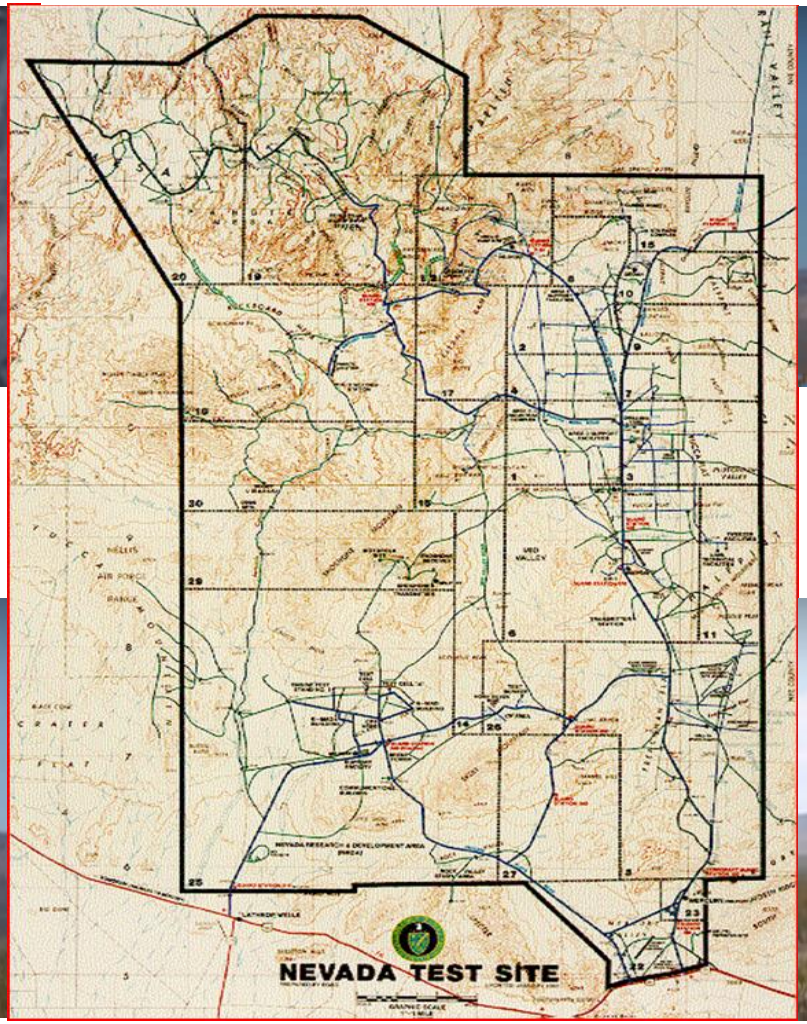
J9TS Test Beds Kirtland AFB

Chestnut Site
up to a 2000lb NEW

GRABS Site
up to 900lb NEW

J9TS Test Beds Nevada National Security Site

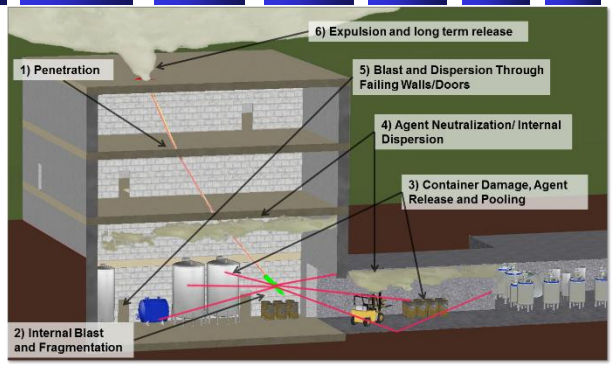
https://www.nnss.gov/pages/resources/library/Media.html



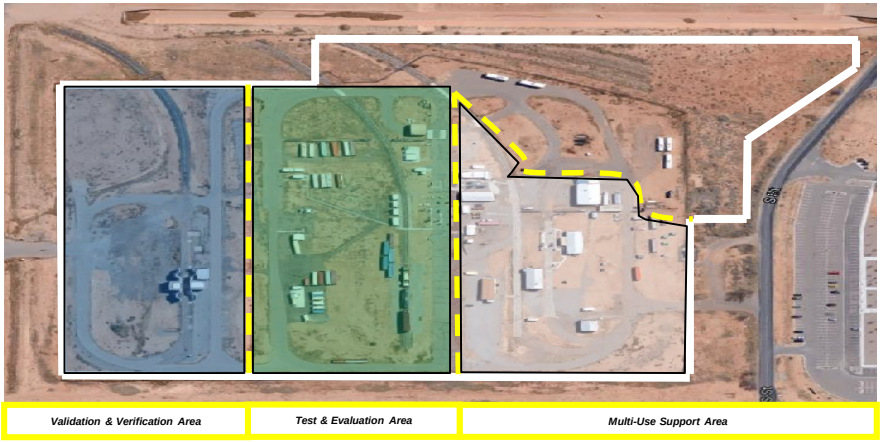
J9TS Programs

Purpose of Establishing Programs:

- Efficiently meet customer test objectives:
  - Minimum test bed infrastructure to address mission needs
  - Low cost, “best value” testing
- Develop capabilities to meet evolving CWMD testing needs
- Partner with DTRA program managers to develop and start transition of test diagnostics to operational capabilities



Chemical/Biological Testing Program



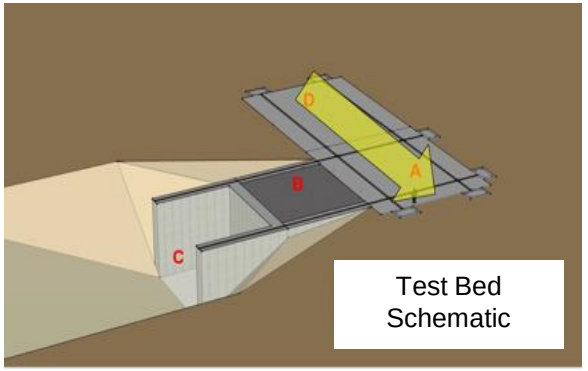
Radiological/Nuclear Materials Detection Testing Program

United States Nuclear Tests, July 1945 through September 1992, DOE/NV-209 (Rev. 14), December 1994

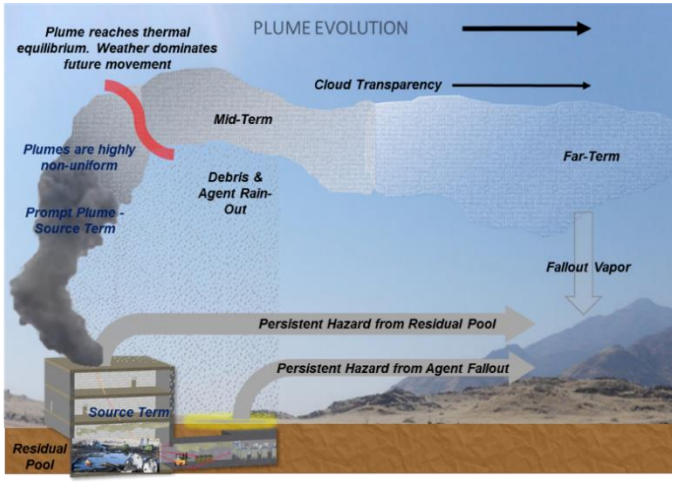
Nuclear Event Characterization Testing Program

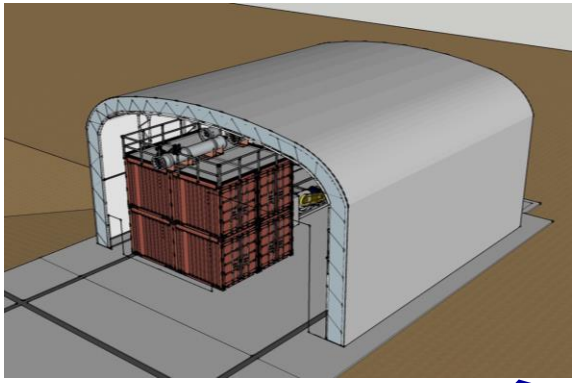
Chemical/Biological Testing Program

- Program Goals:
  - Provide test validation to enhance CCDR confidence in pre-strike modeling and simulation tools for potential agent release
  - Develop and transition stand-off sensor capabilities to provide robust characterization of chem/bio plumes
  - Identify signatures and determine effectiveness of improvised devices containing chem/bio agents
  - Provide high-confidence, repeatable assessments of weapon performance for agent defeat effectiveness
  - Support TTP development for first responders/investigators
- Partners/Customers: DTRA, FBI, ECBC, JPEO-CBD, Others



Test Bed Schematic



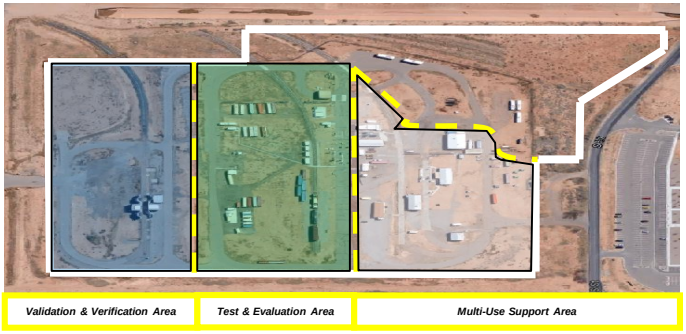


Radiological/Nuclear Materials Detection Testing Program

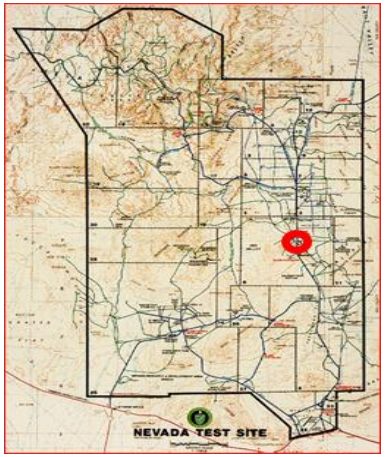
Objective: To provide *world-class venues* for the test and evaluation of developmental sensors and detection technologies, and the TTPs to use them, in a *realistic environment* with *realistic sources*

Partners/Customers: DTRA J9NTD, DNDO, NNSA, others

Technical Evaluation Assessment Monitor Site (TEAMS)



Nevada National Security Site

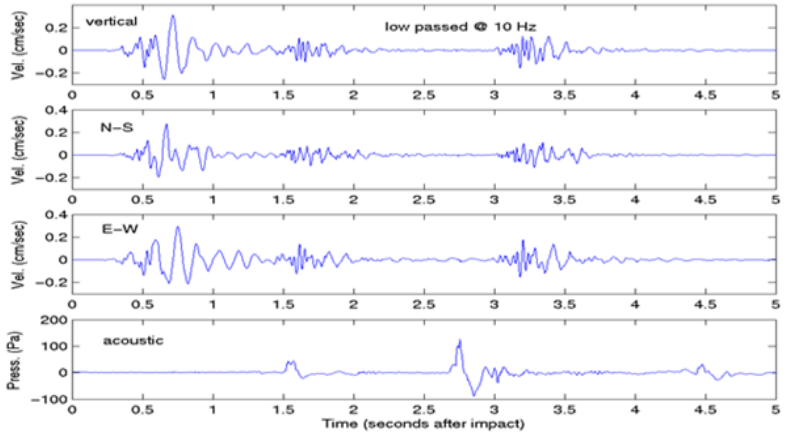


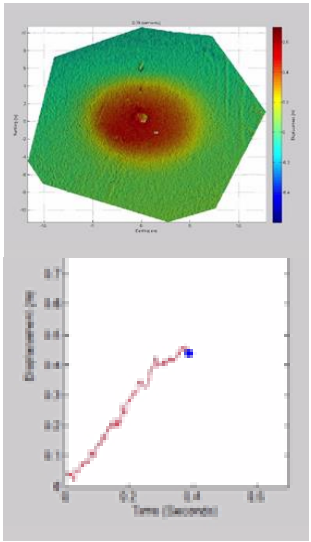
Sources

Container Stack

J9TS Enabling Capabilities

1. Mobile Instrumentation Integration
   - *Objective:* Support WMD testing anywhere in the world with State-of-the-art diagnostics capabilities
2. Remote Sensing Test Diagnostics
   - *Objective:* Develop & transition novel test diagnostics for further development & potential OPS
   - *Elements:* seismo-acoustic arrays, photogrammetry, RF characterization, optical/MSI/HSI sensors, integrated NTM
3. Explosives Expertise
   - *Objective:* Ability to produce desired source uniformity at any yield, and partner with IHEODTD for adapting IED designs & employing HME
   - *Customers:* J9CB, J9CX, J9NT, JIDO, FBI
4. UAS, UGS, and Autonomous Systems
   - *Objective:* Be a key DoD player in the T&E of autonomous systems & enable their integration as diagnostics in CWMD test events
   - *Elements:* Photogrammetry, Rad/Nuke Materials Detection/Characterization, Chem/Bio plume analysis





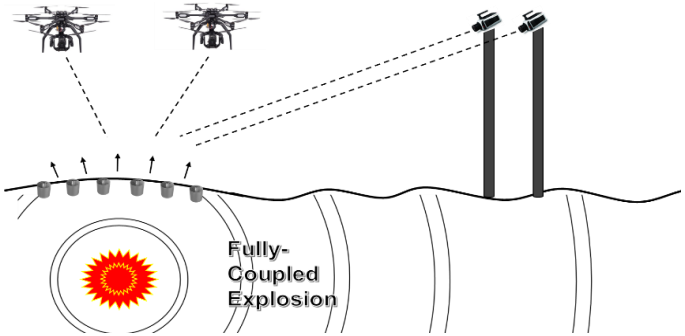
Autonomous Systems & UAS Development Path

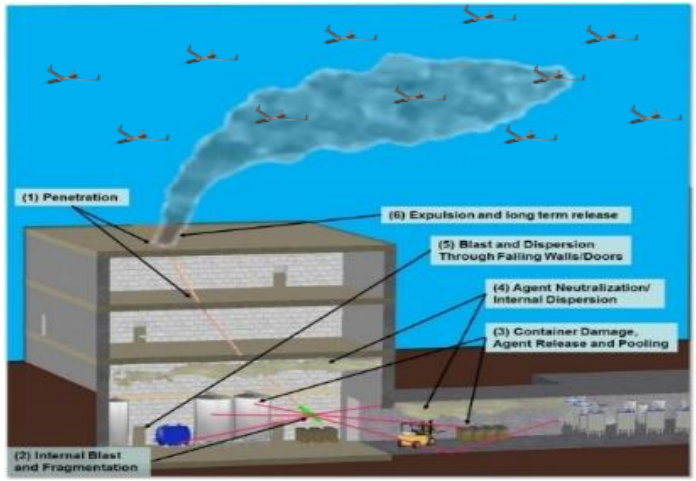
Increasing Complexity

1. Dynamic Digital Photogrammetry
   - 2nd UAS autonomously maintains appropriate altitude relative to piloted vehicle
   - Potential for adaptive jitter correction

2. Rad/Nuke Materials Detection in realistic environment
   - DTRA swarm for mapping area of interest: 3-D map generated in real-time
   - DTRA UAS with integrated DTRA radiation/SNM detector for source location, identification, and characterization
   - TEAMS Test events:
     - Initial event: Sources hidden in container stack
     - Culmination event: Sources above/below ground structures

3. Chem/Bio plume characterization
   - UAS-based LIDAR to characterize plume boundary and micro-wind field
   - On-board modeling to adapt swarm to evolving plume
   - UAS-based HSI to characterize plume constituents, and aerosol/vapor fractions
   - Individual UAS plume sampling with on-board analysis capability



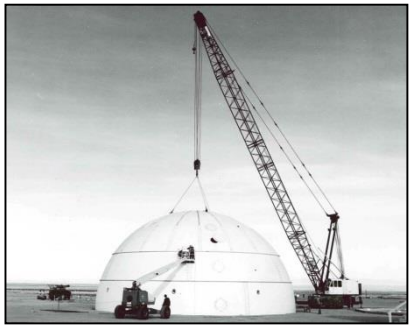
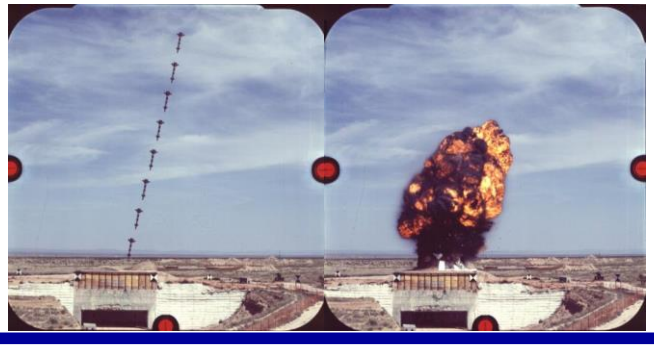


QUESTIONS?

WWII "Manhattan Project" -- Cold War -- Gulf War I -- Terror Attacks -- Gulf War II -- Today

1942 1947 1959 1971 1996 1998

Nuclear Weapons – Simulated Nuclear Weapon Air Blast – AT/FP/CT – CP/AD/CWMD – HTD

Helping the Department of Defense and VA Save Lives

The Columbia Suicide Severity Rating Scale

Kelly Posner, Ph.D.

Founder and Director – The Columbia Lighthouse Project

Suicide is a Global Public Health Crisis, Yet Preventable

"The under-recognized public health crisis of suicide"

Thomas Insel, Director of NIMH

More Deaths Than Natural Disasters, War and Homicide Combined

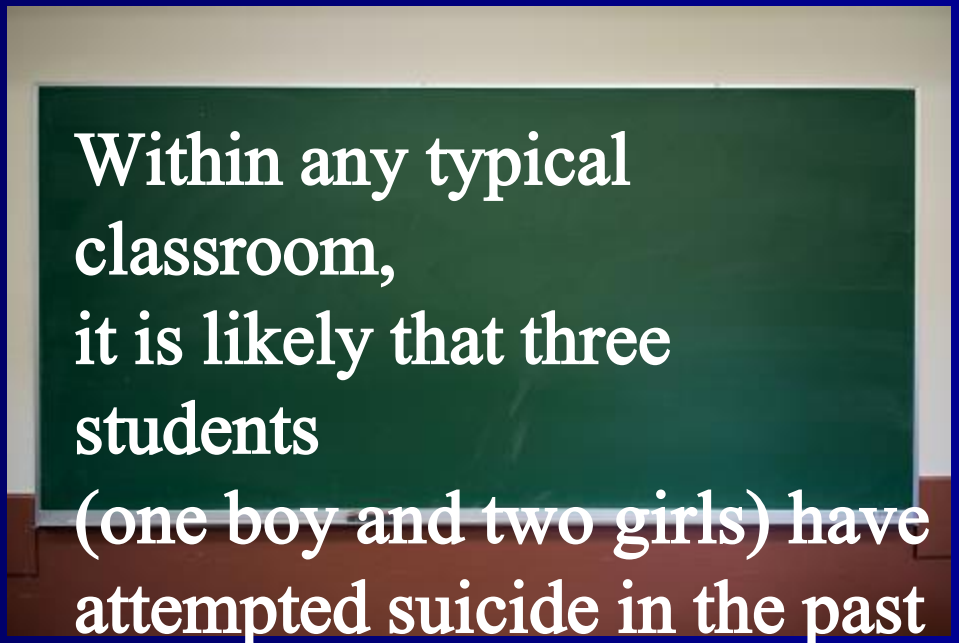
Suicide Kills More People than Car Crashes

Suicide is the #1 Killer of Teenage Girls Across the Globe, 2nd Leading Cause of Death Among 10-24 Year-olds in the US…

Suicide Ideation and Attempts Are Surprisingly Common…

IN YOUR AVERAGE HIGH SCHOOLERS

- ***8% attempted in the <u>past year!</u>***
- ***17% seriously considered it***



Suicide Touches Everyone

135 People Are Affected for Every Death And Effects Linger Across Generations Because of the Silence that Often Follows

U.S. Life Expectancy Decreases: Suicide Deaths Play a Role

Health & Science

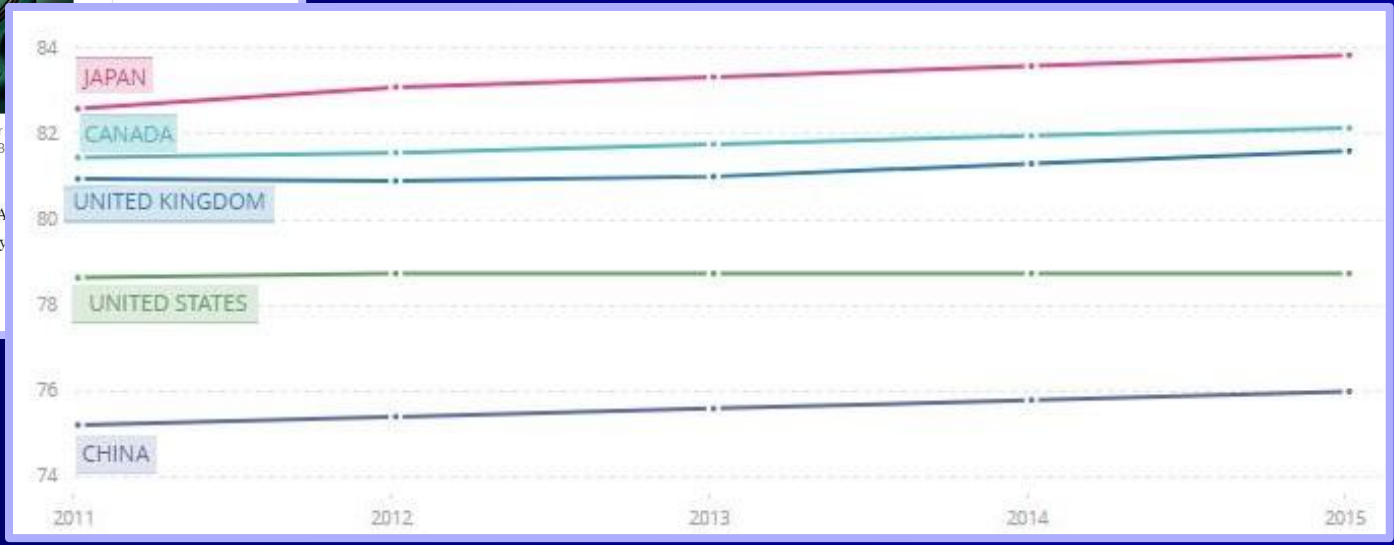
U.S. life expectancy declines for the first time since 1993

By Lenny Bernstein December 8, 2016

The Post's Lenny Bernstein explains a report that shows life expectancy for has declined in 2015 for the first time since 1993. (Monica Akhtar, Gillian B Washington Post)

For the first time in more than two decades, life expectancy for A declined last year — a troubling development linked to a panoply worsening health problems in the United States.

Anomaly Among Developed Nations



Breaking But Not Surprising News: Large Portion of Overdoses Are Suicides

Researchers | Medical & Health Professionals | Patients & Families | Parents & Educators | Children & Teens

NIH National Institute on Drug Abuse
Advancing Addiction Science

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Home » About NIDA » Nora's Blog » **Opioid Use Disorders and Suicide: A Hidden Tragedy (Guest Blog)**

Opioid Use Disorders and Suicide: A Hidden Tragedy (Guest Blog)

Share

April 20, 2017

*At a Congressional briefing on April 6, the **President of the American Psychiatric Association, Dr. Maria Oquendo**, presented startling data about the opioid overdose epidemic and the role suicide is playing in many of these deaths. I invited her to write a blog on this important topic. More research needs to be done on this hidden aspect of the crisis, including whether there may be a link between pain and suicide.* —Nora

In 2015, over 33,000 Americans died from opioids—either prescription drugs or heroin or, in many cases, more powerful synthetic opioids like fentanyl. Hidden behind the terrible epidemic of opioid overdose deaths looms the fact that many of these deaths are far from accidental. They are suicides.

Let me share with you some chilling data from

About This Blog

Welcome to my blog, here I highlight important work being done at NIDA and other news related to the science of drug abuse and addiction.

Nora's Blog ▸

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Recent Posts

Desperately Self-Medicating in lieu of proper treatment

Opioids in 1 out of 5 suicide fatalities

A Crisis in Every Sector of Society…
From Police to EAPs

Need to Screen and Care for the Caretakers

Corrections

First Responders

Often #1
Cause of death
Among police
themselves

Employees

Large corporation 100,000
Employees, every 6 days
Employee or family member
dies

WELLS FARGO

Clergy

CLERGY

Doctors

Need to Ask: Screen and Monitor Like Blood Pressure

Nearly 50% of people who die by suicide see their primary care doctor the month before they die

A VITAL OPPORTUNITY FOR PREVENTION

2/3 adolescent attempters in ER not present for psych reasons

If we ask, we can reach those who suffer.

Active Duty: Healthcare Utilization One Month Prior to Suicide

USAF rates of use:

45% with an outpatient visit

USAF primary care most frequently used

(Trofimovich et al, 2014, JCP)

IDF rates of use:

38% contacted primary care

IDF: contact with primary care > mental health

(Hochman et al. 2014, JCP)

Lack of Routine Assessment: ESSENTRIS Military Electronic Health Records

- Retrospective chart review: 1500 cases admitted for suicide-related events to Walter Reed, 2001-2006
- 11% admitted for serious suicidal ideation 12% with suicide attempt had no documentation of past suicide behaviors
- No suicide screening and/or assessment measure administered in a single case

Economic Burden: What Not Being Able to Identify High Risk Costs…

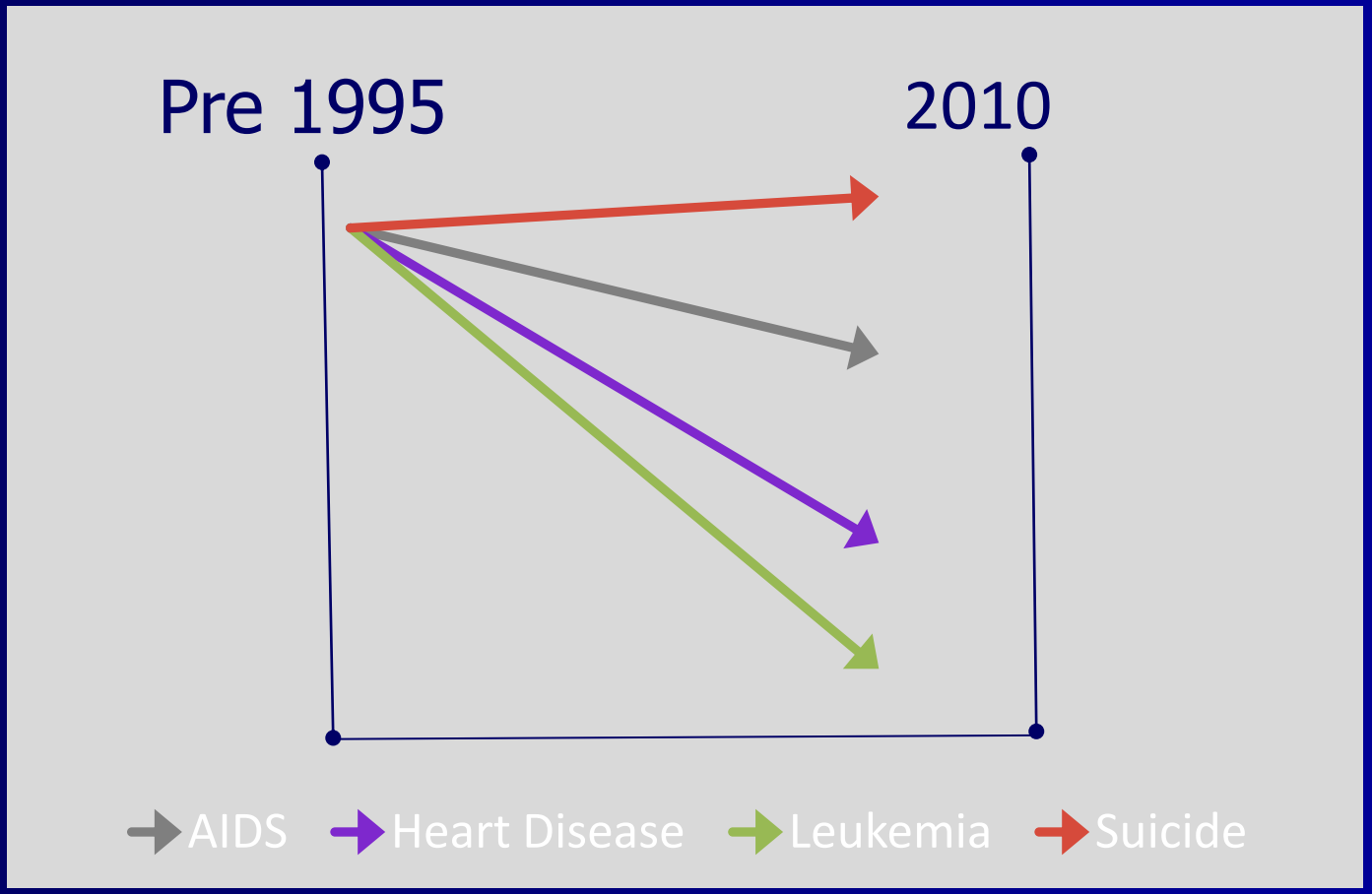
- US (2010): **$45 billion— lost wages and work productivity**
- 1,000 Non-Psychiatric Screened at Colorado University

  Prior:

  400% increase in hospitalizations over past 2 years

  300% increase in ED visits

Unlike Other Lethal Diseases Little Headway in Treating Suicide

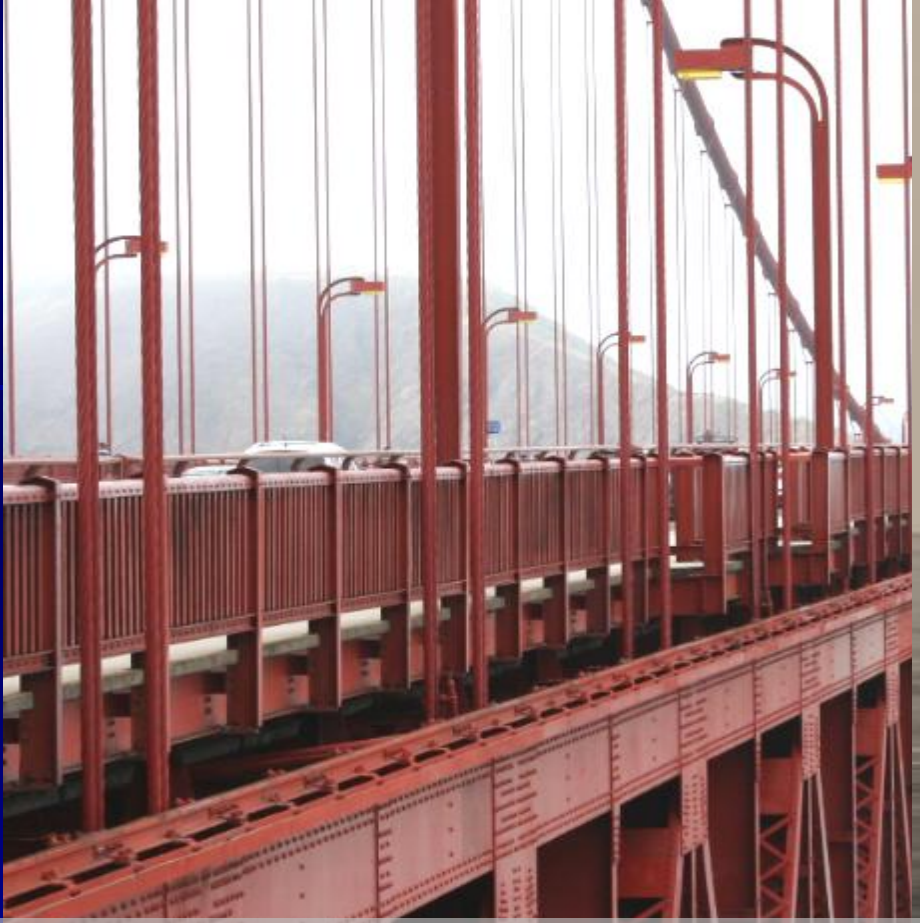


Screening Works

- Meta-analysis concluded that **screening results in lower suicide rates in adults** (Mann et al., JAMA 2005)

"…say that over the years, 3 of their patients died by suicide soon after their medical appointment with them. It is their belief that if the medical clinic-wide suicide screening (Columbia) now being implemented had been in place at the time, **those 3 patient suicides may have been prevented**

One pilot site implemented the Columbia suicide screen in their family health clinic at every medical visit**. In the first month, that clinic identified 5 patients at high risk of suicide – each of whom would almost certainly have been missed** prior to this change" – Air Force Comm



Barriers to Help: Gender Difference Less Treatment Seeking In Men

Suicide Attempts:

- Female>>male
- Rates peak in adolescence
- Concern: Latina youth and LGBTQ

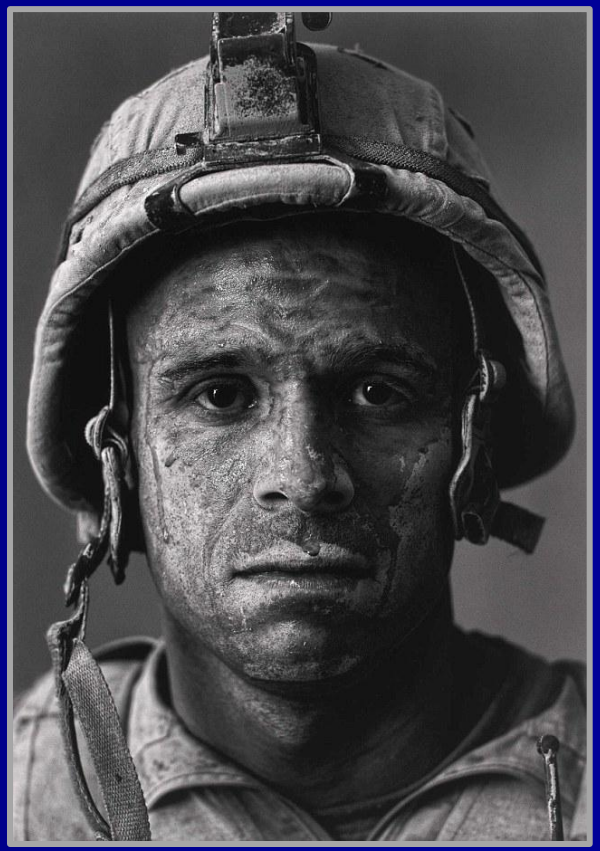
Suicide Deaths:

- Male : female = 4:1
- **41% vs 11% antidepressants in system**
- Working-age males (60%)

Stigma - Barrier to Getting Help: "Real Men Don't Get Depressed"

"We obviously have a peer-to-peer stigma, the machismo that 'I can't admit that I have to see a counselor or psychiatrist, that makes me weak and we're at war, and there can't be any chinks in the armor."

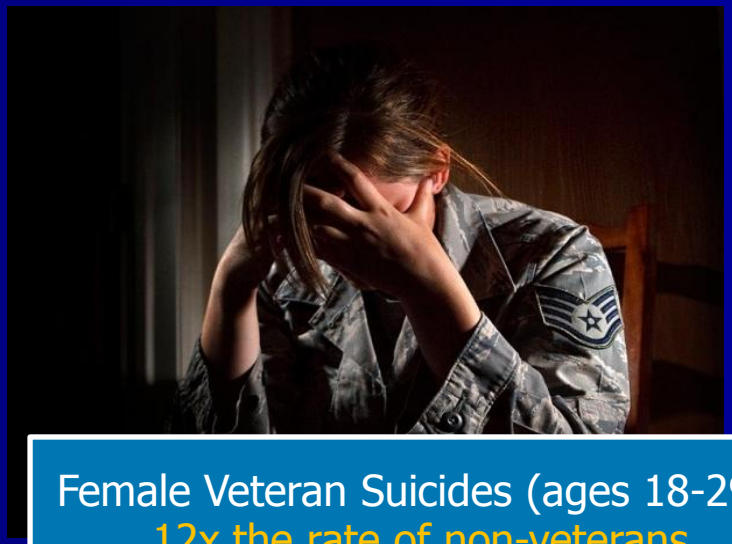
– Command Sgt. Maj. Chris Faris,
18-year veteran of Delta Force



Face of war: U.S. Marine Carlos 'OJ' Orjuela photographed by Louie Palu

Veterans: Gender Barriers

Male Veteran Suicides (ages 18-29):
4.7x the rate of non-veterans
Increased 30%



Female Veteran Suicides (ages 18-29):
12x the rate of non-veterans
Increased 80%

Male Veterans Die by Suicide 4x Female Vets

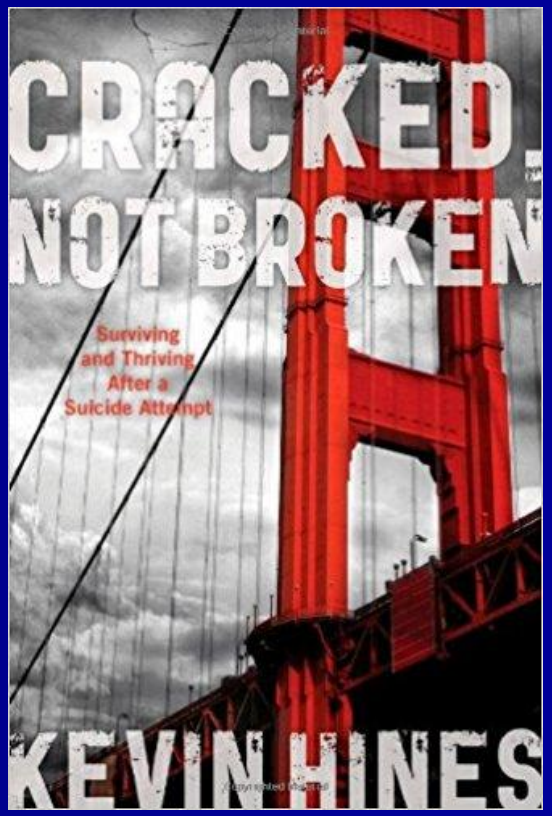
Stigma Can Be Lethal

[My husband] said to his buddy, his fellow marine, "everybody goes through this." He was empathic; he said "you know, we've all been there. Take some time, take care of yourself. But don't go to treatment and don't go on medication because you cannot do that and fly."

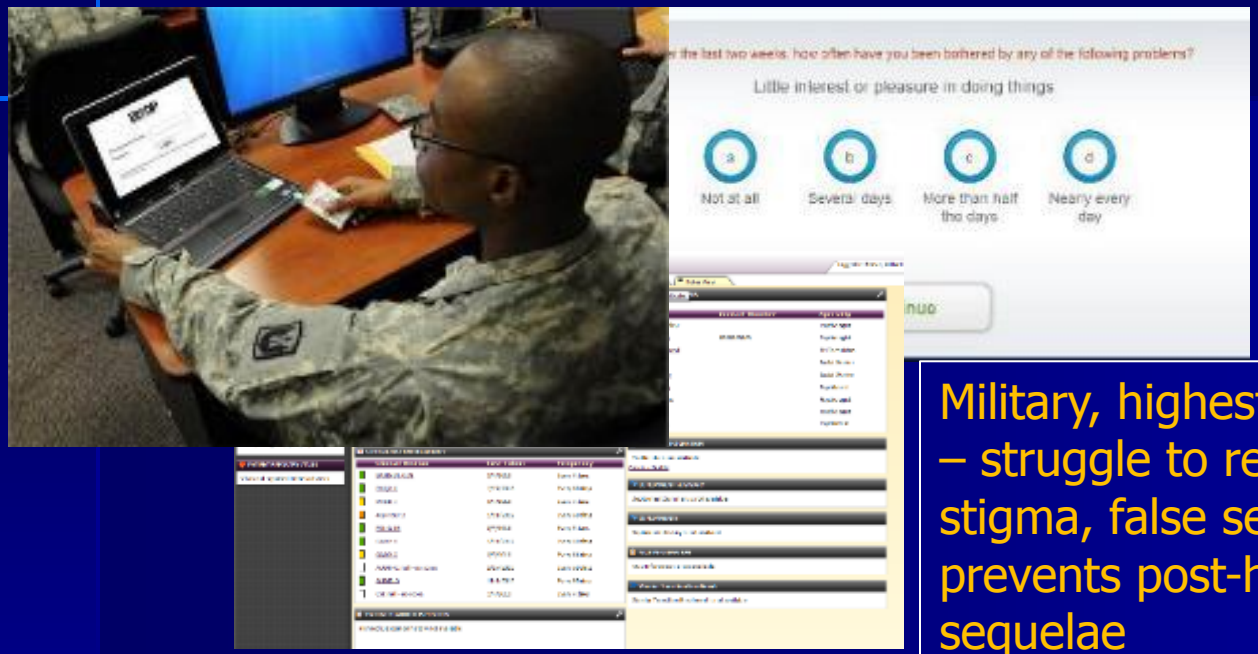
The Power of Asking: Just Ask. You Can Save a Life.

"Most people considering suicide want someone to save them. What we need is a culture in which no one is afraid to ask. What we needed were the questions people could use to help save us. That's why the pioneering change the C-SSRS is enabling is so essential to our humanity."

– Kevin Hines,
suicide attempt survivor



Reducing Stigma Saves Lives in the US Army



Military, highest risk post-hospitalization – struggle to reintegrate into unit, stigma, false sense of recovery so this prevents post-hospitalization risk sequelae

- Treatment is no longer a stigmatizing outpost
- Mental health questions are integrated into other care
- Inpatient overnights reduced 41% saving 30-40 million dollars since 2012
- Decrease in suicide

Identification is the first key to saving lives…

If we can't reach those who are suffering in silence, we can't help them

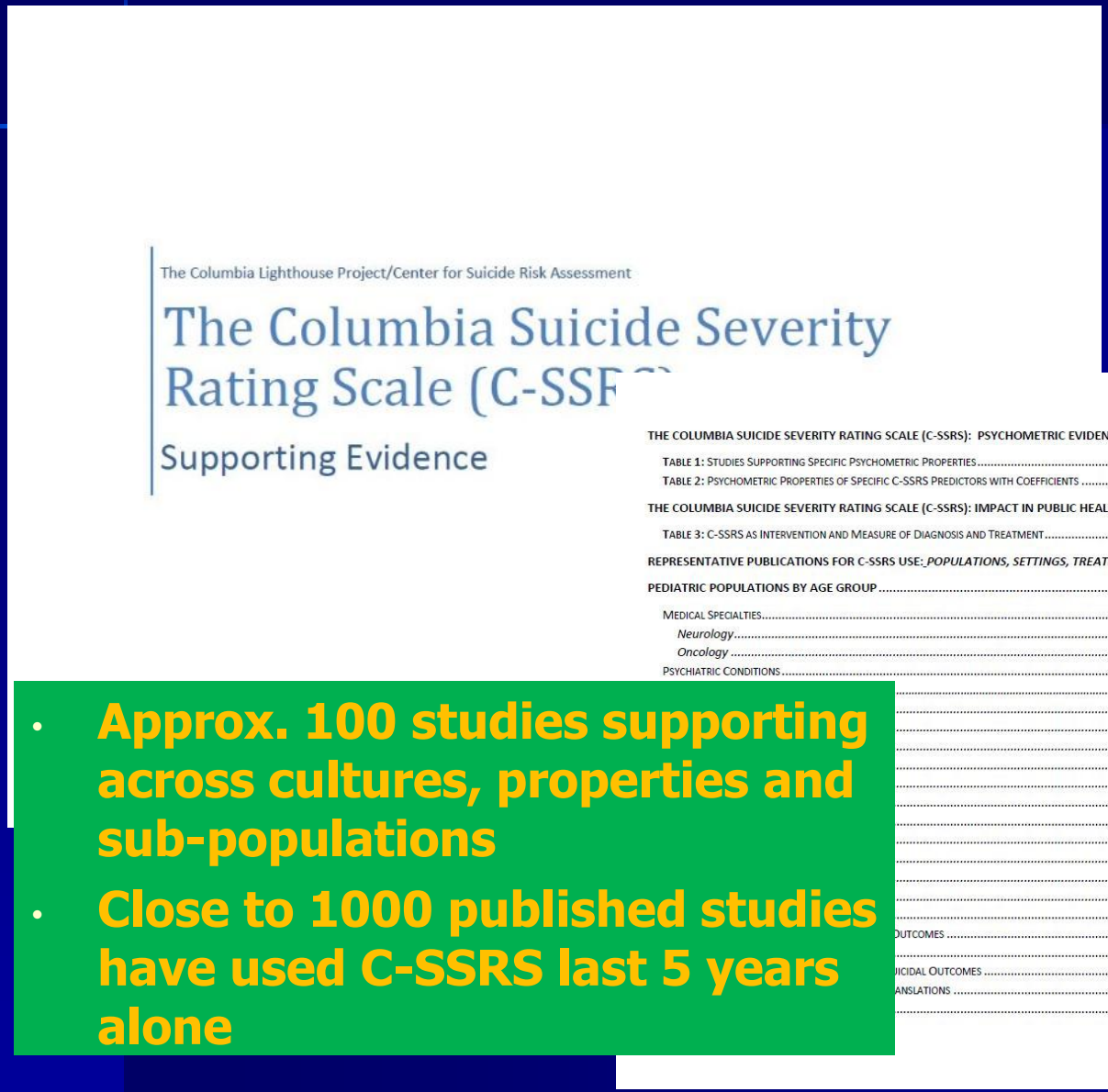
Columbia-Suicide Severity Rating Scale (C-SSRS)

Posner, K.; Brent, D.; Lucas, C.; Gould, M.; Stanley, B.; Brown, G.; Zelazny, J.; Fisher, P.; Burke, A.; Oquendo, M.; Mann, J.

- Developed in NIMH effort to address unmet need
- 10s of millions administrations
- Available in 116 languages
- Endorsed, Recommended, Adopted or Mandated by many National and International Agencies

- Deemed "most" evidenced supported
- All ages, All Special Populations

Science To Service



The Columbia Lighthouse Project/Center for Suicide Risk Assessment

The Columbia Suicide Severity Rating Scale (C-SSR

Supporting Evidence

THE COLUMBIA SUICIDE SEVERITY RATING SCALE (C-SSRS): PSYCHOMETRIC EVIDENCE 2
TABLE 1: STUDIES SUPPORTING SPECIFIC PSYCHOMETRIC PROPERTIES 2
TABLE 2: PSYCHOMETRIC PROPERTIES OF SPECIFIC C-SSRS PREDICTORS WITH COEFFICIENTS 3
THE COLUMBIA SUICIDE SEVERITY RATING SCALE (C-SSRS): IMPACT IN PUBLIC HEALTH AND DIAGNOSTIC AND TREATMENT-MONITORING EFFECTIVENESS 7
TABLE 3: C-SSRS AS INTERVENTION AND MEASURE OF DIAGNOSIS AND TREATMENT 7
REPRESENTATIVE PUBLICATIONS FOR C-SSRS USE: *POPULATIONS, SETTINGS, TREATMENT EFFICACY AND ASSESSMENT GUIDELINES* 10
PEDIATRIC POPULATIONS BY AGE GROUP 10
MEDICAL SPECIALTIES 12
Neurology 12
Oncology 13
PSYCHIATRIC CONDITIONS 13
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..... 13
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..... 13
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UTCOMES 16
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IICIDAL OUTCOMES 16
ANSLATIONS 17
..... 17

- **Approx. 100 studies supporting across cultures, properties and sub-populations**
- **Close to 1000 published studies have used C-SSRS last 5 years alone**

Internal and External Liability
Asking These Questions Protects Against Risk

"If a practitioner asked the questions… It would provide some legal protection"

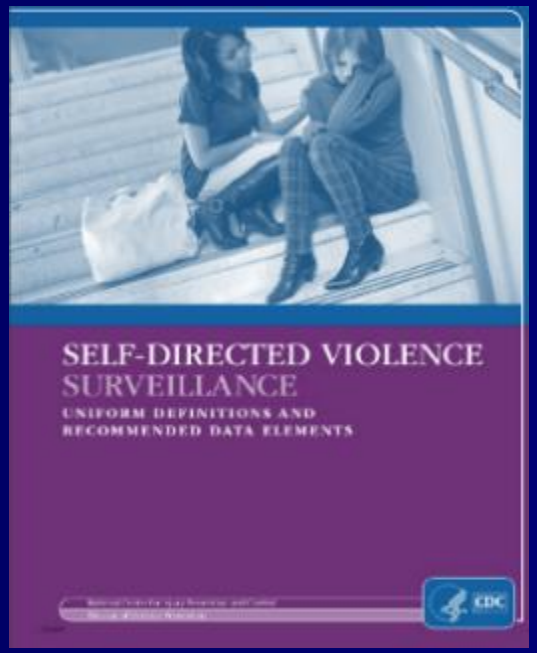
—Bruce Hillowe, mental health attorney specializing in malpractice litigation (Crain's NY, 11/8/11)

"I believe it sets the standard…we take a proactive position in patient safety" – Patient Safety Risk Manager

"People don't get sued for something bad happening, they get sued for negligence."

Adopted by CDC: Importance of a Common Language

"The C-SSRS is changing the paradigm in suicide risk assessment in the US and worldwide" – Alex Crosby



Also from CDC:
"Unacceptable Terms"

- *Completed suicide*
- Failed attempt
- Parasuicide
- *Successful suicide*
- Suicidality
- Nonfatal suicide
- Suicide gesture
- Manipulative act
- Suicide threat

Source: Posner K, Oquendo MA, Gould M, Stanley B, Davies M. Columbia Classification Algorithm of Suicide Assessment (C-CASA): Classification of Suicidal Events in the FDA's Pediatric Suicidal Risk Analysis of Antidepressants. Am J Psychiatry. 2007; 164:1035-1043. http://cssrs.columbia.edu/

C-SSRS… Vital Signs

Joint Commission and the C-SSRS

TheSource™
For Joint Commission Compliance Strategies

[Hospitals and health care systems] have either developed something themselves or they're using a piecemeal approach, with different tools in different departments: What may appear to be a person at risk in one area may not appear to be at risk in another. **When the ED is asking their set of questions, and then the social worker asks another set**, then the psychiatrist asks another, you're reducing the signal strength. **You're not honing in on the needle in the haystack.**

"The research shows that **this tool** will help organizations **focus on folks who are at highest risk**."

"By adopting the C-SSRS, organizations ensure that **one tool is being used by all caregivers**, who can then use the same terminology when communicating with other caregivers…Using **the same language helps all caregivers** understand what the patient needs."

Why it's good to do one thing… Science and the Public Health Demand Uniformity

- Moving away from a single instrument inherently degrades the precision of the signal
- The impact of imprecision **grows when incidence rates are low**
- Multiple measures increase noise, decrease precision and weaken rigor of epidemiological and research data

FDA: "It should be noted that the use of different instruments is likely to increase measurement variability…decreasing the opportunity to identify potential signals in future meta-analyses…this type of imprecision is particularly problematic in dealing with events that have a low incidence, as is the case for suicidal ideation and behavior occurring in clinical trials."

NIMH: PHEN-X

"Same Sheet of Music"

A Few Simple Questions to Save A Life: Identify Who Needs Help and Connect Them to Care

Minimum of 2 Questions — Maximum of 6 Questions

COLUMBIA-SUICIDE SEVERITY RATING SCALE
Screen Version - Recent

SUICIDE IDEATION DEFINITIONS AND PROMPTS	Past month YES	Past month NO
Ask questions that are bolded and underlined.		
Ask Questions 1 and 2		
1) Wish to be Dead: Person endorses thoughts about a wish to be dead or not alive anymore, or wish to fall asleep and not wake up. ***Have you wished you were dead or wished you could go to sleep and not wake up?***		
2) Suicidal Thoughts: General non-specific thoughts of wanting to end one's life/die by suicide, "*I've thought about killing myself*" without general thoughts of ways to kill oneself/associated methods, intent, or plan. ***Have you actually had any thoughts of killing yourself?***		
If YES to 2, ask questions 3, 4, 5, and 6. If NO to 2, go directly to question 6.		
3) Suicidal Thoughts with Method (without Specific Plan or Intent to Act): Person endorses thoughts of suicide and has thought of a least one method during the assessment period. This is different than a specific plan with time, place or method details worked out. "*I thought about taking an overdose but I never made a specific plan as to when where or how I would actually do it….and I would never go through with it.*" ***Have you been thinking about how you might do this?***		
4) Suicidal Intent (without Specific Plan): Active suicidal thoughts of killing oneself and patient reports having some intent to act on such thoughts, as opposed to "*I have the thoughts but I definitely will not do anything about them.*" ***Have you had these thoughts and had some intention of acting on them?***		
5) Suicide Intent with Specific Plan: Thoughts of killing oneself with details of plan fully or partially worked out and person has some intent to carry it out. ***Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?***		
6) Suicide Behavior Question:	**Lifetime**	
Have you ever done anything, started to do anything, or prepared to do anything to end your life? Examples: Collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump; or actually took pills, tried to shoot yourself, cut yourself, tried to hang yourself, etc.		
If YES, ask: ***Were any of these in the past 3 months?***	**Past 3 Months**	

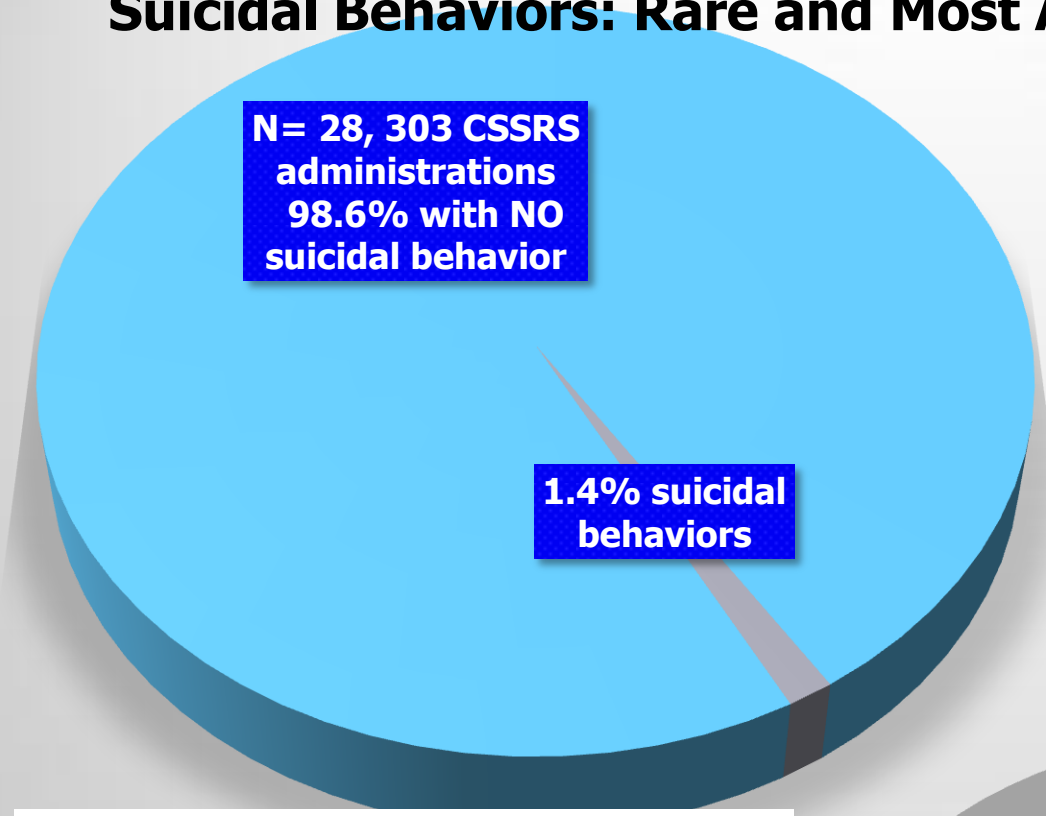
Low Risk
Moderate Risk
High Risk

If 2 is Yes, ask 3-6

If 2 is No, go to 6

Highlights from the Science:

Suicidal Behaviors: Rare and Most Are NOT Suicidal Attempts

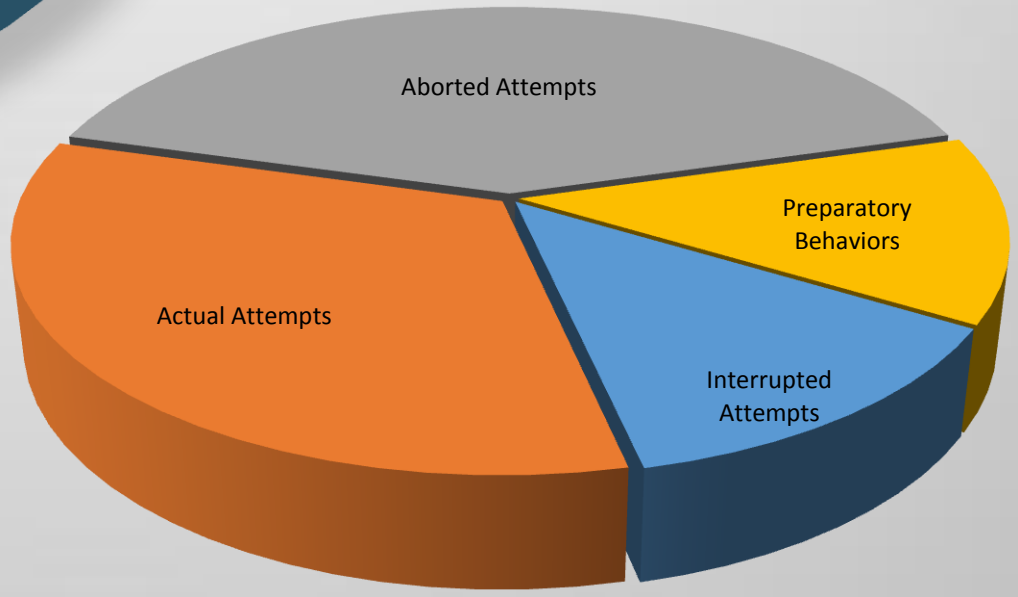


Of the 1.4% suicidal behaviors:
87% (472) = interrupted + aborted + preparatory
vs.
Only 13% (70) actual attempts

Each type of suicidal behavior is equally predictive

Multiple behaviors = greater risk

Must ask about all



Everyone, Everywhere Can Ask and Need to Ask

"This is prevention for the masses now, not just the educated, the wealthy or those in the medical field. It is available and accessible for all of humanity."

Helping Find Those At Risk in the EOD Community

ACE CARD

ASK YOUR SPOUSE

CARE FOR YOUR SPOUSE

ESCORT YOUR SPOUSE

See Reverse for Questions that Can Save a Life

Answer Questions 1 and 2	In the Past Month YES	NO

ACE CARD

Ask Your Fellow Tech

Care for Your Fellow Tech

Escort Your Fellow Tech

See Reverse for Questions that Can Save a Life

	In The Past Month YES	NO
Answer Questions 1 and 2		
1) *Have you wished you were dead or wished you could go to sleep and not wake up?*		
2) *Have you actually had any thoughts about killing yourself?*		
If YES to #2, answer questions 3, 4, 5 and 6. If NO to 2, go directly to question 6		
3) *Have you thought about how you might do this?*		
4) *Have you had any intention of acting on these thoughts of killing yourself, as opposed to you have the thoughts but you definitely would not act on them?*		
5) *Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?*		
Always Ask Question 6	**In the Past 3 Months**	
6) *Have you done anything, started to do anything, or prepared to do anything to end your life?* Examples: Collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, held a gun but changed your mind, cut yourself, tried to hang yourself, etc.		

Any YES must be taken seriously. Seek help from friends, family, co-worker, and inform them as soon as possible.

If the answer to 4, 5, or 6 is YES, immediately ESCORT to the nearest Mental Health Provider, Emergency Department/Emergency Personnel.

DON'T LEAVE THE INDIVIDUAL ALONE.

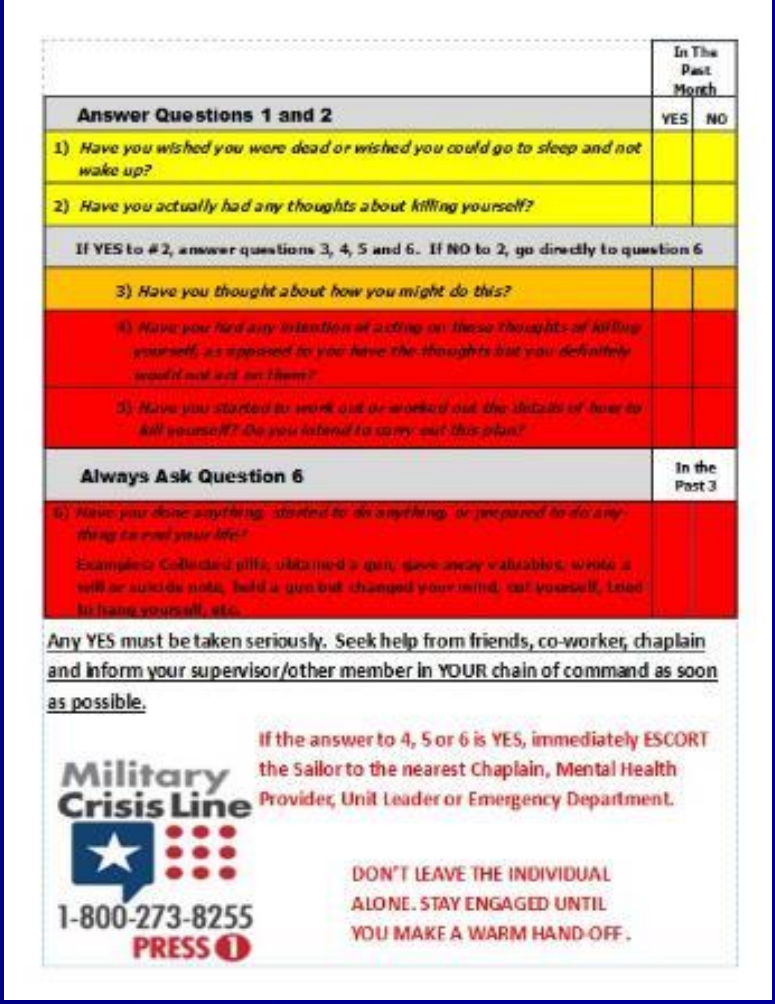
STAY ENGAGED UNTIL YOU MAKE A WARM HAND-OFF TO SOMEONE WHO CAN HELP.

EOD WARRIOR FOUNDATION

Veterans Crisis Line 1-800-273-8255 PRESS 1

THE COLUMBIA LIGHTHOUSE PROJECT

Air Force ACE Cards for all Airmen and their Spouses



Empowering Everyone in the Military to Make a Difference

Medical Model

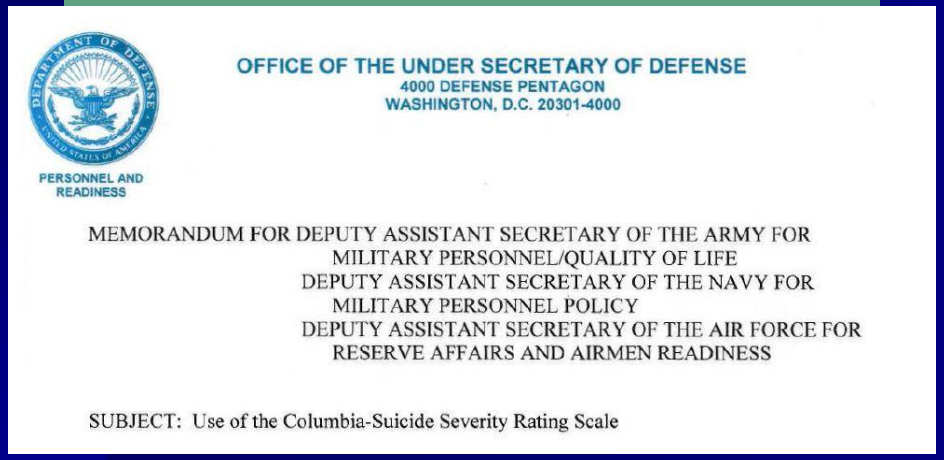
- Narrow approach
- Mental health treatment by clinicians in hospitals & clinics
- Majority of servicemen and their families do not seek specialized treatment

Public Health Model

- Broad approach
- Target: whole community
- Training of all gatekeepers within military community
  - military commands
  - community counselors
  - chaplains
  - law enforcement
  - firefighters
  - first responders
  - attorneys
  - peers

Must Go Beyond the Medical Model Towards A Community Approach: Marines Reduce Suicide by 22%

Undersecretary of Defense Urgent Memo



OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000

PERSONNEL AND READINESS

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE ARMY FOR MILITARY PERSONNEL/QUALITY OF LIFE
DEPUTY ASSISTANT SECRETARY OF THE NAVY FOR MILITARY PERSONNEL POLICY
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE FOR RESERVE AFFAIRS AND AIRMEN READINESS

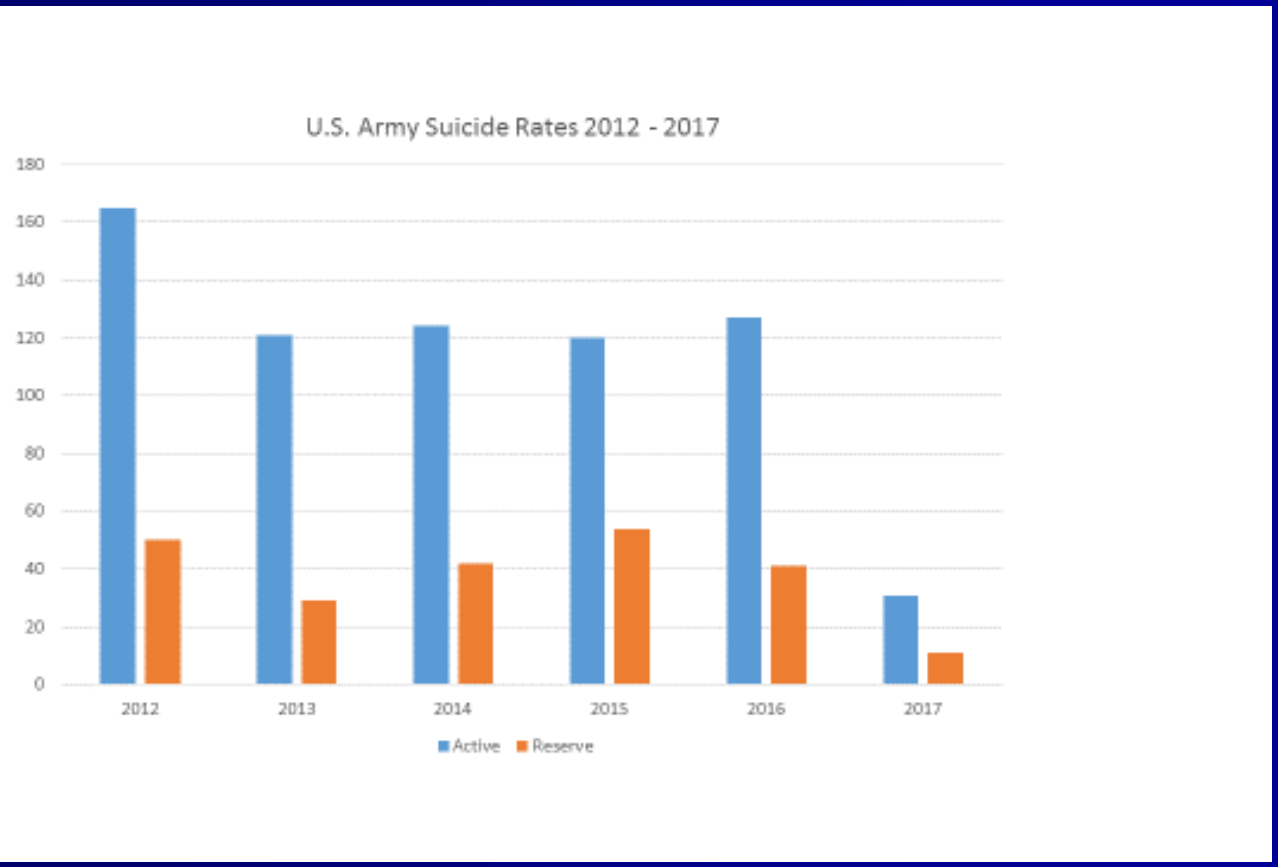
SUBJECT: Use of the Columbia-Suicide Severity Rating Scale

Marine Corps Times
A GANNETT COMPANY

- Total force roll-out
- In the hands of whole community
- ALL support workers: lawyers, financial aid counselors, chaplains

EOD - Facebook

Must Go Beyond Medical Model: Army Suicide Decrease Steeper in Active Duty



Whole Community Systems Approach in the Air Force: Zero Suicide

Support Workers
- Clergy
- Legal Assistants
- Financial Aid Counselors
- Advocates
- Case Managers

Peers & Leadership

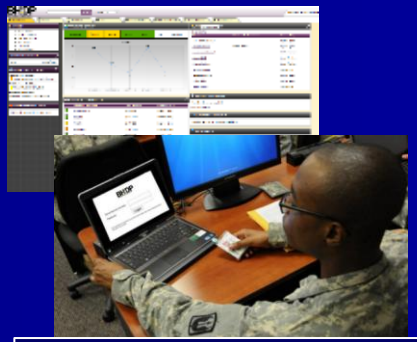
Security/Safety
- Overnights
- Explosive Ordinance Disposal
- Military Police

Spouses

When A Community Comes Together There is Hope

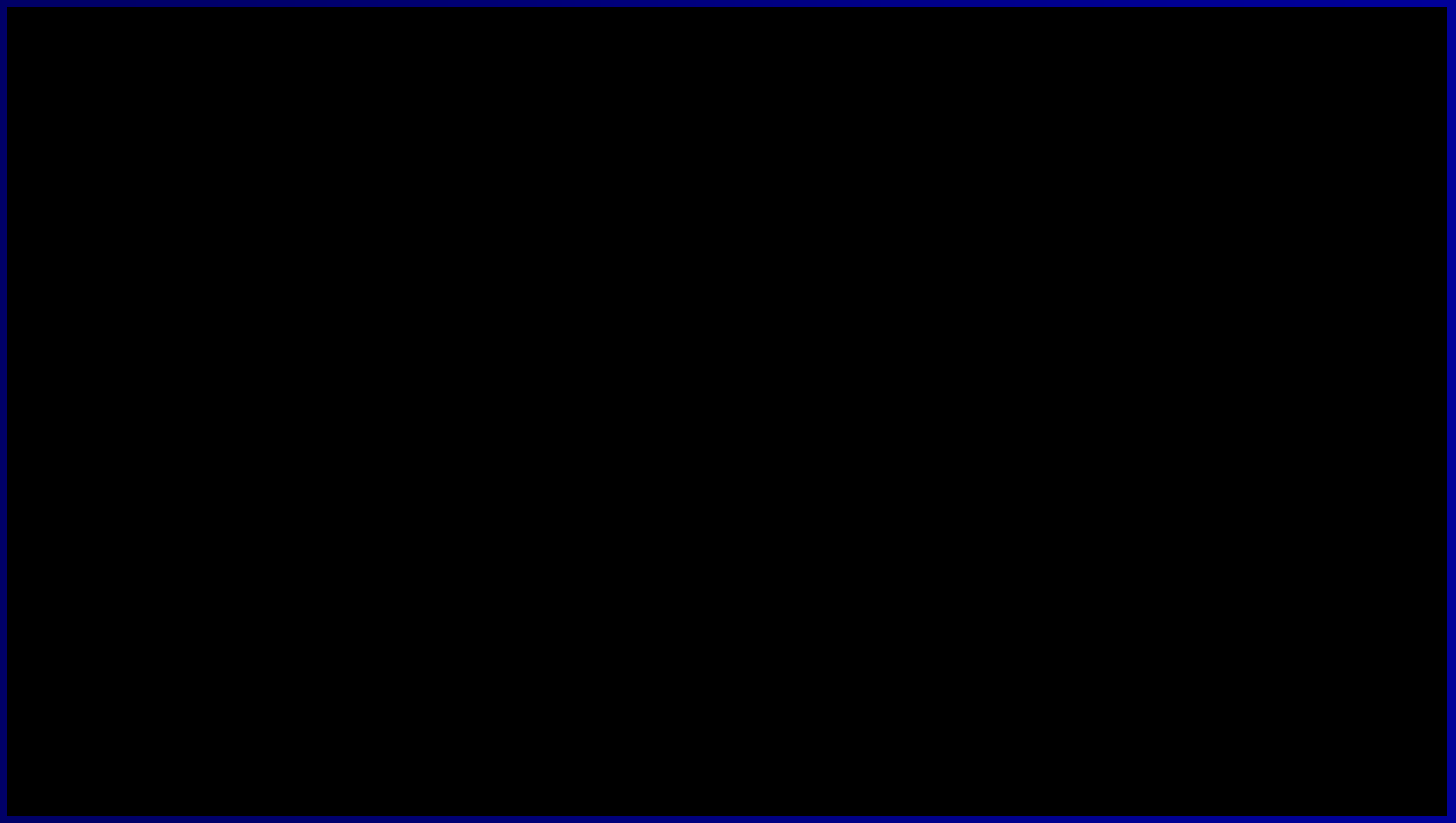
Primary Care, Dentistry

Schools, Child & Family Services



Behavioral Health

Policy/Training Chaplains Remote - Peer to Peer in the USAF



Community Approach: On-Post/Off-Post Connections Ft. Carson Model

On-Post

- BH Providers in Schools

- Non-hospital Soldier assessment and care agencies

Training Together
Improved Communication

Off-Post

- Outpatient BH Clinics

- Hospital Screening

County-Wide Dissemination

One Example: Lapeer County, Michigan

"Complete Blanket Coverage"

**Especially critical in rural areas*

- Highest rates of suicide
- Large populations, spread out across great distances
- Less consistent access to primary care
- Closest physicians may be several hours away and overburdened
- High rates of gun ownership

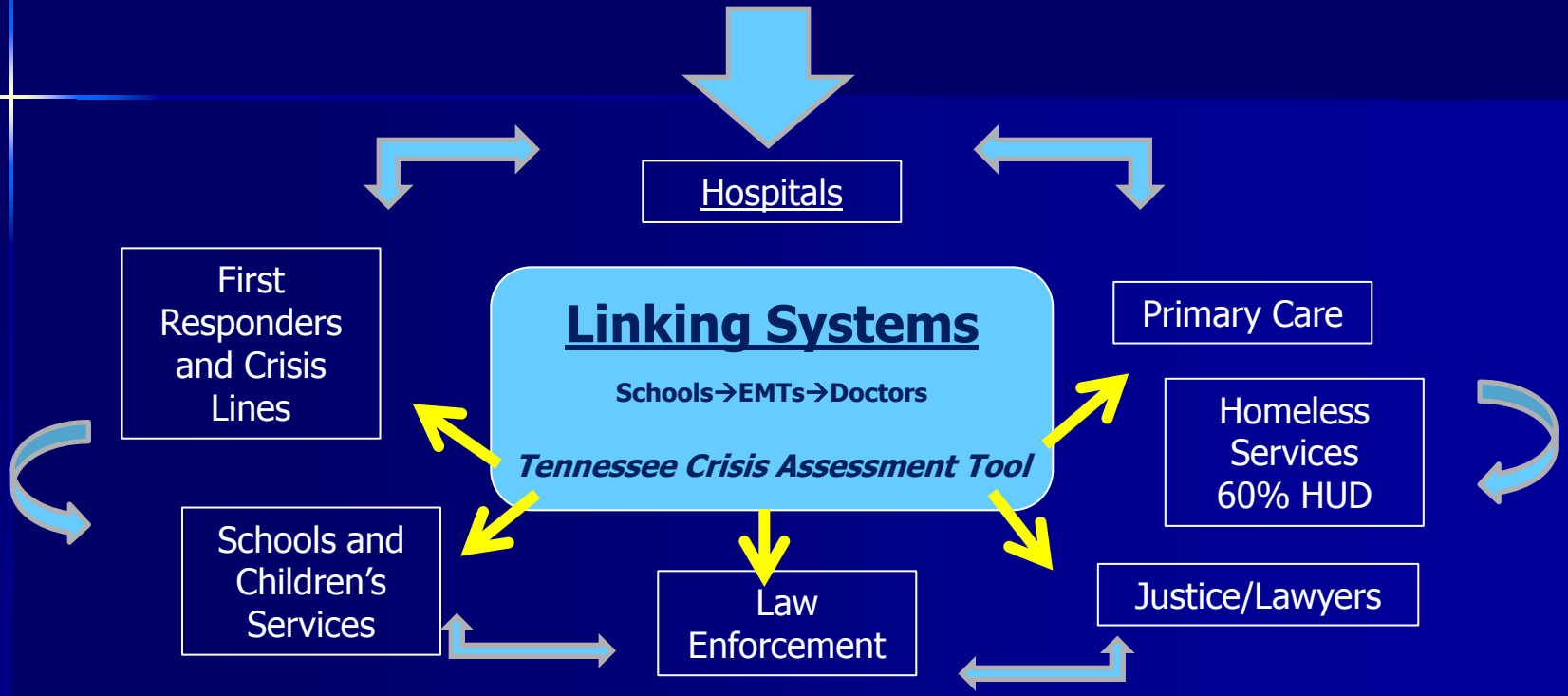
- Court workers
- Mental health workers
- K-12 school staff: teachers, bus drivers, cafeteria workers, etc.
- Clergy
- Law enforcement
- ER staff
- Child welfare workers
- Police Officers, Sheriff, Road Patrol, Village & State Troopers

*** All first responders:** *EMT, Fire Department, Police Officers, etc.*

When A Community Comes Together There is Hope: Linking of Systems

Department Health & Mental Health

Provider By Provider	All Services	Between Services	All Systems of Care



Policy at the state level, even legislation: 45-50 States

" …made a big difference. Historically, "turfed out" to their psychologist. However, after the entire team ….**discussions about suicide became more team wide and robust**. Everyone was now providing observations and ideas about suicide risk management and **wanting to take responsibility for client care."** – OMH, NY

The Power of Asking…

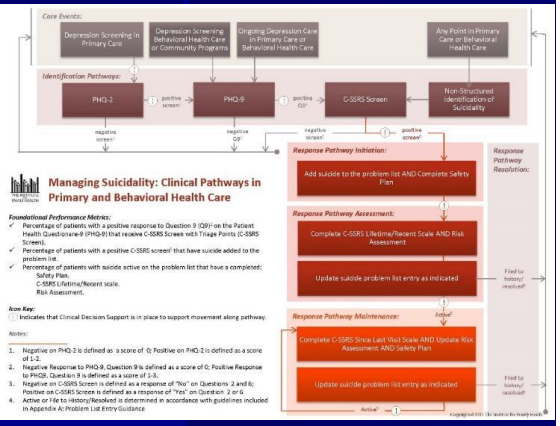
The largest provider of outpatient community behavioral healthcare in the United States reduced their suicide rates 65% over 20 months.

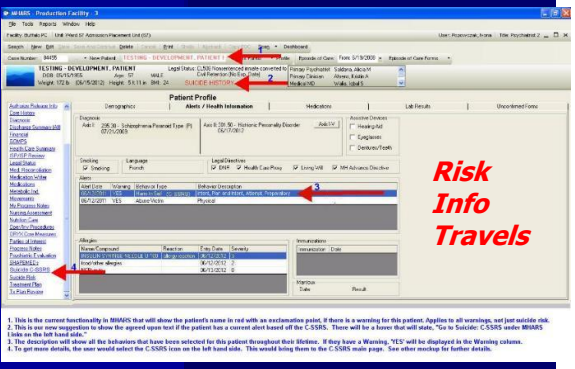
U.S.News & WORLD REPORT

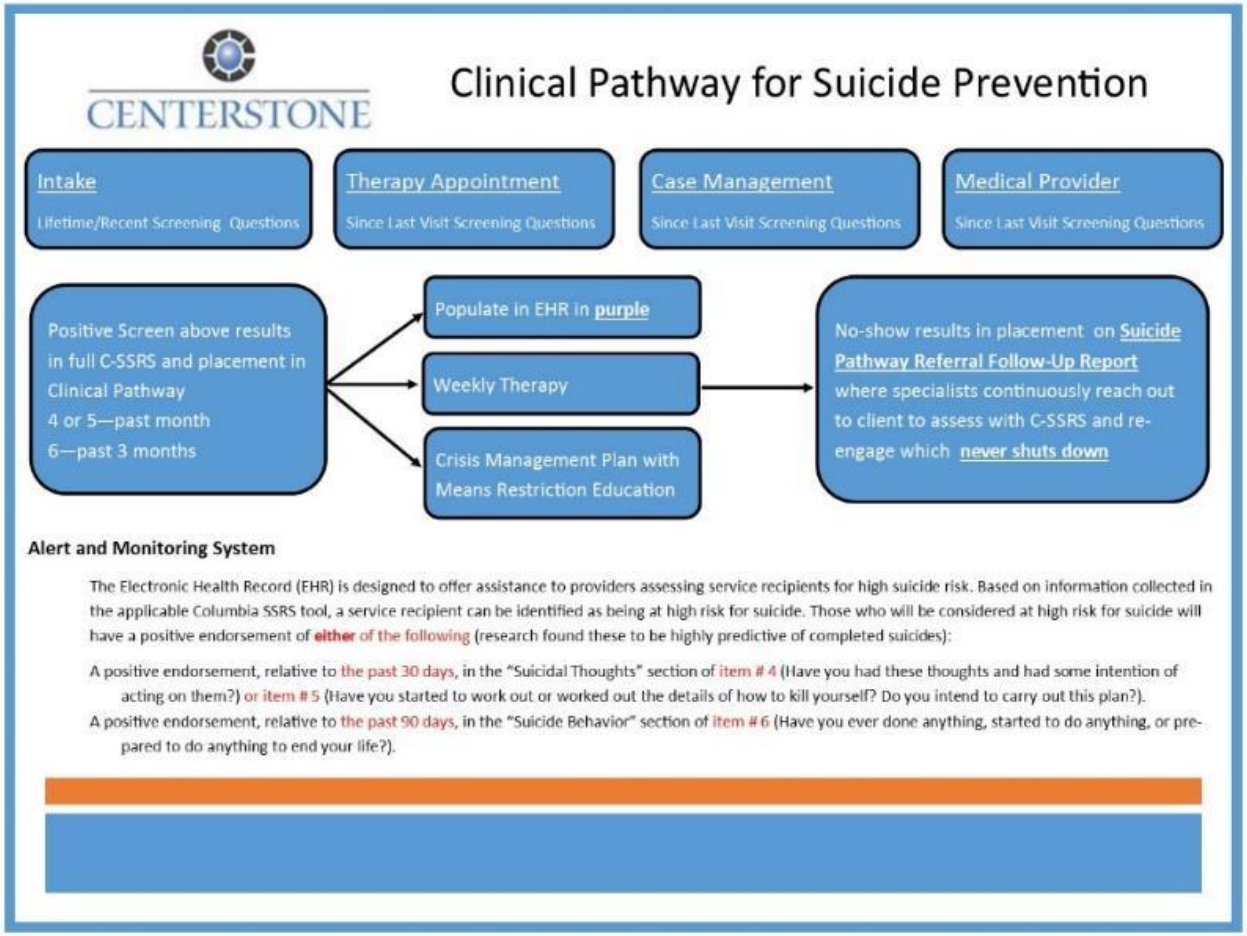
The Care Pathway:

"with so many patients its like mining for gold and the Columbia is the sifter"

Alerting System… suicide reduction in primary care



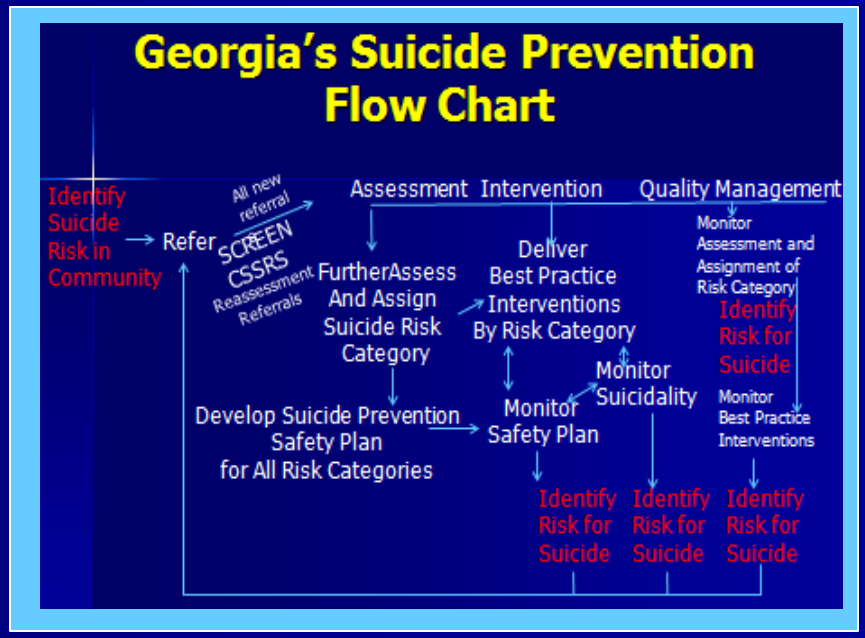




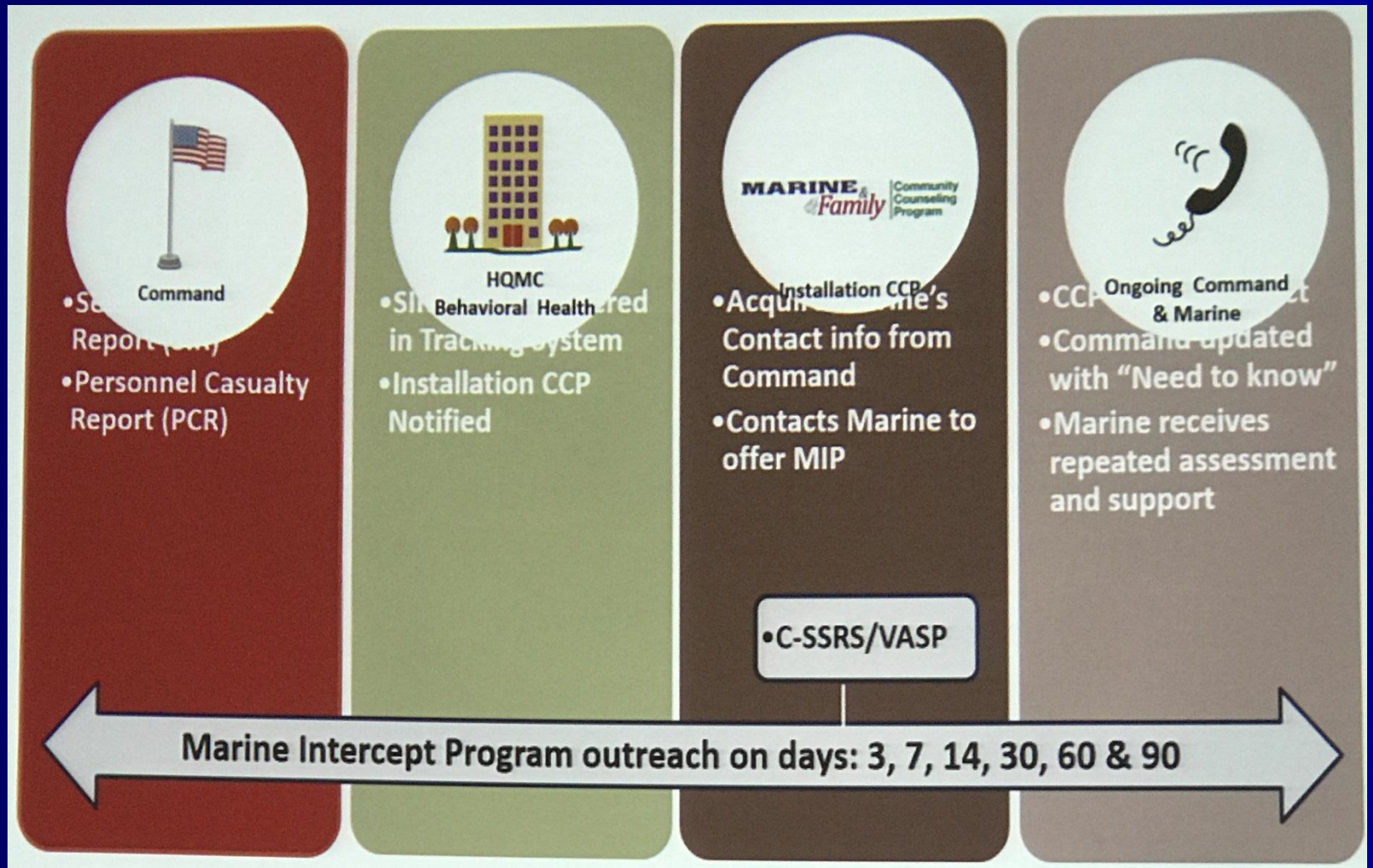
"AIM" Assessment, Intervention and Monitoring

Georgia DBHDD Implementation Plan

1. Introduced Statewide
2. Overview by Region and regional support
3. Policy development at state level for **all Medicaid providers**
4. Provider by Provider implementation
5. Providers implement in all services, between services, and in systems of care

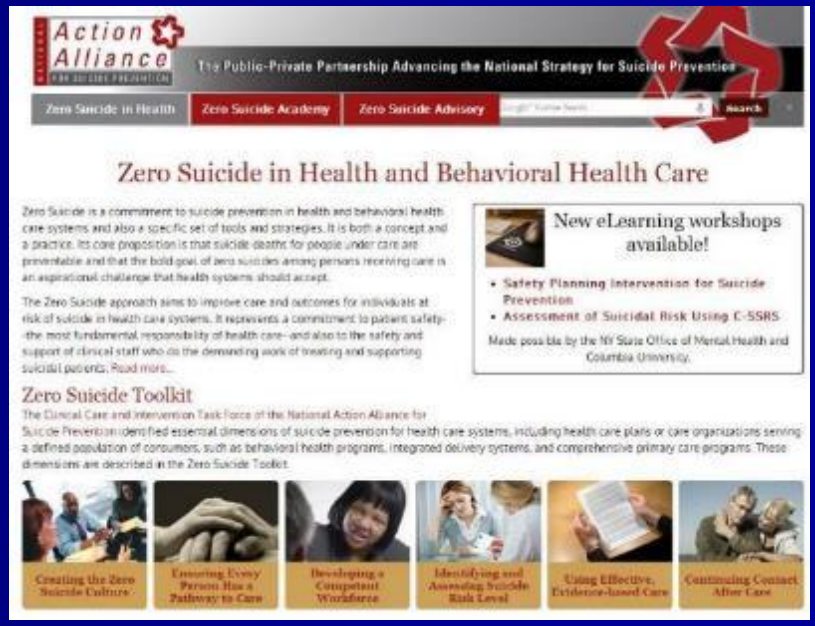


Marine Intercept Program and C-SSRS Implementation Cycle



Public-Private Partnership: National Action Alliance – Toolkit for Zero Suicide

- NY- Eval of recent suicides all same picture: *No good risk assessment, no safety plan, no warm hand-off*
- Organizational vision of zero suicides
- C-SSRS and Safety Planning to be used in training <u>all</u> staff to screen *all patients* statewide



Policy connects risk level from Columbia to Safety Planning

Standardization Across Services: "Services Learning From Each Other"

-Director, Defense Suicide Prevention Office, Department of Defense

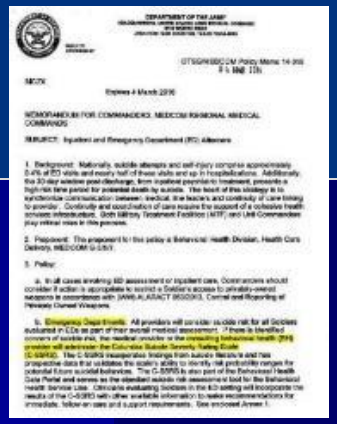
-Director of 21st Century Sailor Office, U.S. Navy

-Director of Marine and Family Programs Division, United States Marine Corps

https://youtu.be/wnoAMC4voLI

Central to National Strategy: Military-Wide Instruction

Recommendation to Tri-Service Surgeon Generals for Use in All Treatment Facilities



Medcom Required in ED

Behavioral Health Data Portal: Over 2 Million Screens

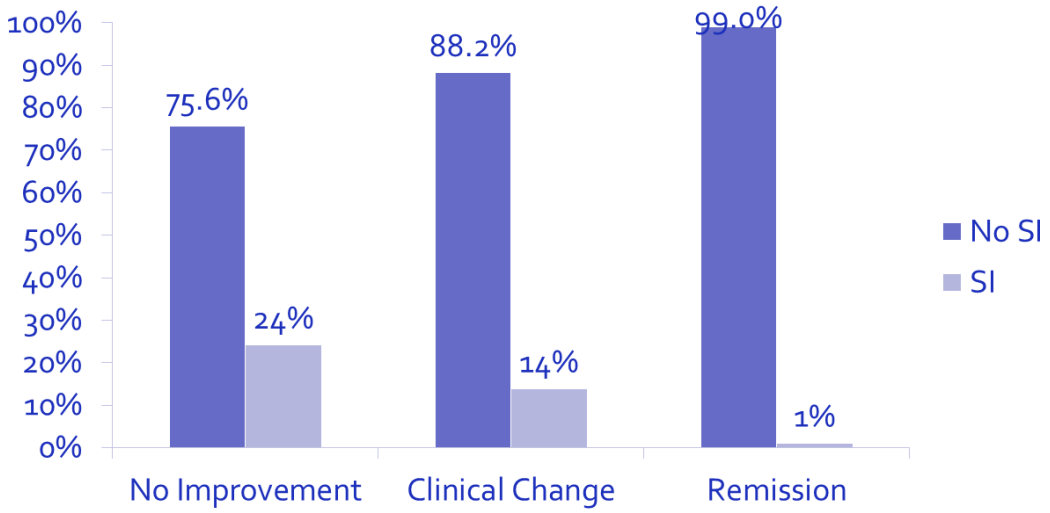
ARMY MEDICINE
Bringing Value...Inspiring Trust
BHDP

"There is literally no other suicide screening measure that has as much predictive capability of future suicidal behaviors, is feasible for executing in the real-world, and as immediately clinically useful in saving lives."

- Millard Brown

Tracking Improvement During Treatment

U.S. Army PTSD Treatment Outcome



Ketamine Treatment for SI/SB

THE JOURNAL OF CLINICAL PSYCHIATRY

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Rapid and Sustained Reductions in Current Suicidal Ideation Following Repeated Doses of Intravenous Ketamine:

Secondary Analysis of an Open-Label Study

Dawn F. Ionescu, MD[a,d,*]; Michaela B. Swee, BA[a]; Kara J. Pavone, BS[a,b]; Norman Taylor, MD[b,d]; Oluwaseun Akeju, MD[b,c]; Lee Baer, PhD[a,d]; Maren Nyer, PhD[a,d]; Paolo Cassano, MD[a,d]; David Mischoulon, MD, PhD[a,d]; Jonathan E. Alpert, MD, PhD[a,d]; Emery N. Brown, MD, PhD[b,d]; Matthew K. Nock, PhD[c,d]; Maurizio Fava, MD[a,d]; and Cristina Cusin, MD[a,d]

It's not just about depression, higher C-SSRS correlates with higher behavioral health symptom distress across domains

Helping Cadets

Navy Chief of Chaplains office screened all Coast Guard Cadets anonymously & communicated results to leadership

"Due to the results, they were given the resources to conduct better-than usual prevention training. Training **resulted in several Cadets coming forward to ask for help."**

Highlights Across the Military…

Non - Medical

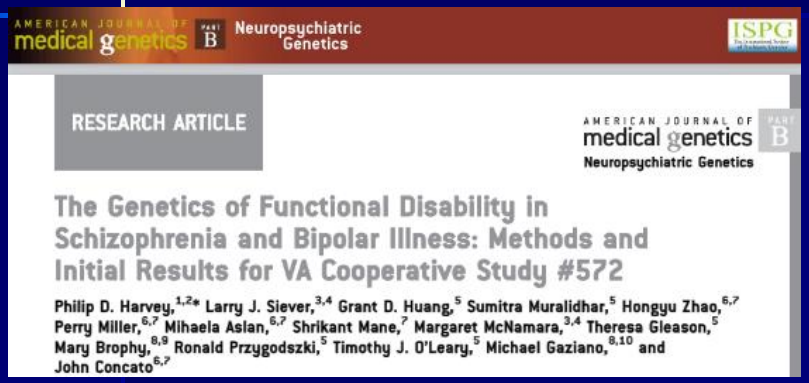
- ACE Schools
- C Schools
- Independent Duty
- Chaplains
- VASP
- Peer to Peer
- Unit Commanders
- Navy SAIL
- Marine Intercept Program

Medical

- Primary Care
- Tri Service
- Navy Corpsman
- Mental Health
- Army Emergency Department Mandate
- Essentris

Navy: embedded mental health…in submarines, now care comes to them

VA System: C-SSRS in the Study and Identification of Suicide Risk


AMERICAN JOURNAL OF medical genetics PART B Neuropsychiatric Genetics

RESEARCH ARTICLE

AMERICAN JOURNAL OF medical genetics PART B Neuropsychiatric Genetics

The Genetics of Functional Disability in Schizophrenia and Bipolar Illness: Methods and Initial Results for VA Cooperative Study #572

Philip D. Harvey,[1,2*] Larry J. Siever,[3,4] Grant D. Huang,[5] Sumitra Muralidhar,[5] Hongyu Zhao,[6,7] Perry Miller,[6,7] Mihaela Aslan,[6,7] Shrikant Mane,[7] Margaret McNamara,[3,4] Theresa Gleason,[5] Mary Brophy,[8,9] Ronald Przygodszki,[5] Timothy J. O'Leary,[5] Michael Gaziano,[8,10] and John Concato[6,7]

Tennessee Valley VA Healthcare System:

"Valuable tool to ensure that necessary steps were ***taken to safeguard an individual or return them back home with support. It can help avoid unnecessary hospitalization or save a life."***

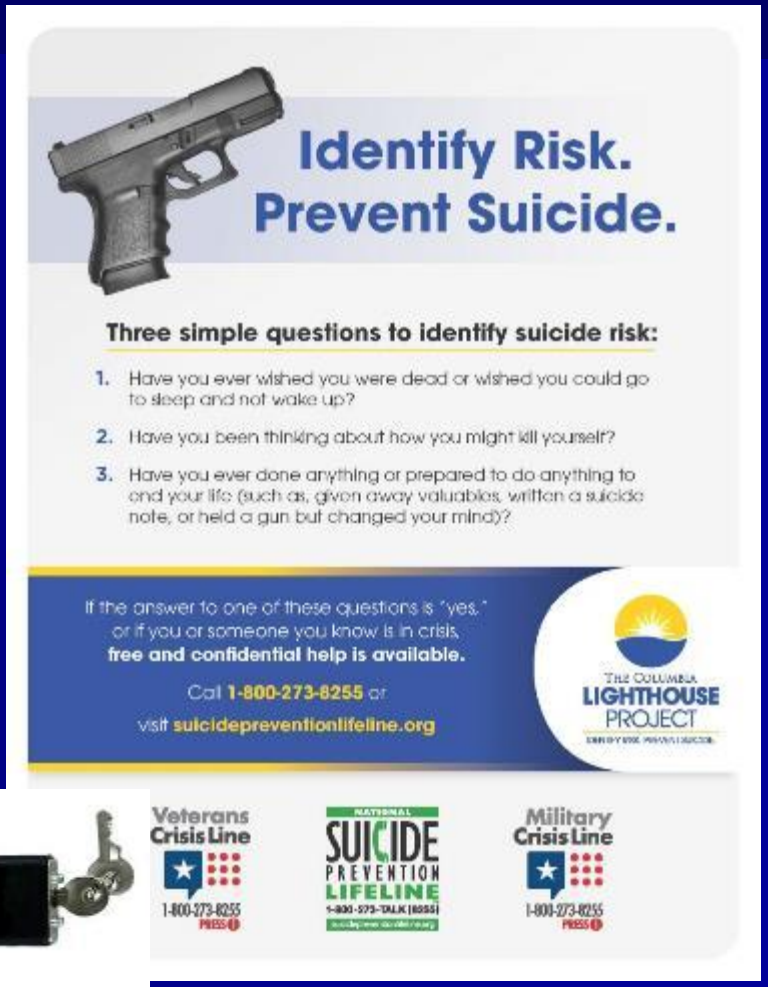
- 8,000 Veterans in the VA system
- NO suicides during 4-year monitoring
- 3 of 8,000 Vets (.03%) high risk
- 3.65% of 4000 Vets with Schizophrenia had ideation with intent
- 46% had any lifetime behavior

The Power of Asking: The Gun Buyer Wants to Be Saved

Working with gun community to ask……

An estimated 55 million Americans own a firearm

2/3 of gun deaths are suicide



The Power of Asking- Help Address One of Our Nation's Prominent Crises

Over 1000 Mass Shootings in the US Since Sandy Hook Alone

Up to 90% of school shooters had history of suicide attempts or thoughts prior to attack

The Power of Asking: Orlando Hostage Negotiators Seek Guidance in the Wake of Tragedy

Many hostage takers are suicidal

"both identifying those in crisis and in enabling us to keep more personnel out on the street instead of in the mental health facility….. can reduce law enforcement officer suicide rates with this tool as well."

- Lieutenant/ Crisis Negotiations Commander

Impact on Care Delivery and Service Utilization…

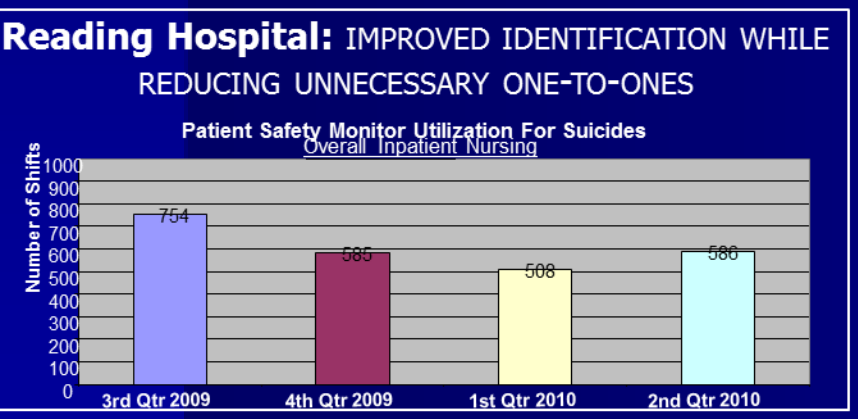
Research Supported Thresholds for Imminent Risk Identification

Operationalized criteria for triage and next steps whatever they may be (e.g. referral to mental health, one-to-one, etc.)

Indicated clinical management response

Implications:
Determining if able to return "fit for full duty"
Ability to deploy

Reading Hospital: IMPROVED IDENTIFICATION WHILE REDUCING UNNECESSARY ONE-TO-ONES



COLUMBIA-SUICIDE SEVERITY RATING SCALE
Primary Care Screen with Triage Points

SUICIDE IDEATION DEFINITIONS AND PROMPTS:	Past month YES	NO
Ask questions that are in bold and underlined.		
Ask Questions 1 and 2		
1) Wish to be Dead: Person endorses thoughts about a wish to be dead or not alive anymore, or wish to fall asleep and not wake up? ***Have you wished you were dead or wished you could go to sleep and not wake up?***		
2) Suicidal Thoughts: General non-specific thoughts of wanting to end one's life/commit suicide. "*I've thought about killing myself*" without general thoughts of ways to kill oneself/associated methods, intent, or plan." ***Have you had any actual thoughts of killing yourself?***		
If YES to 2, ask questions 3, 4, 5, and 6. If NO to 2, go directly to question 6.		
3) Suicidal Thoughts with Method (without Specific Plan or Intent to Act): Person endorses thoughts of suicide and has thought of a least one method during the assessment period. This is different than a specific plan with time, place or method details worked out. "*I thought about taking an overdose but I never made a specific plan as to when where or how I would actually do it…and I would never go through with it.*" ***Have you been thinking about how you might do this?***		
Active suicidal thoughts of killing oneself and patient reports having some intent to act on such thoughts, as oppose to "*I have the thoughts but I definitely will not do anything about them.*" ***Have you had these thoughts and had some intention of acting on them?***		
5) Suicide Intent with Specific Plan: Thoughts of killing oneself with details of plan fully or partially worked out and person has some intent to carry it out. ***Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?***		
6) Suicide Behavior Question ***Have you ever done anything, started to do anything, or prepared to do anything to end your life?*** Examples: Collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump; or actually took pills, tried to shoot yourself, cut yourself, tried to hang yourself, etc. **If YES, ask:** ***Was this within the past 3 months?***	Lifetime / Past 3 Months	

Item 1 Behavioral Health Referral
Item 2 Behavioral Health Referral
Item 4 Behavioral Health Consultation and Patient Safety Precautions
Item 5 Behavioral Health Consultation and Patient Safety Precautions
Item 6 3 months ago or less: Behavioral Health Consultation and Patient Safety Precautions

Disposition:
- Behavioral Health Referral
- Behavioral Health Consult (Psychiatric Nurse/Social Worker) and consider Patient Safety Precautions
- Behavioral Health Consultation and Patient Safety Precautions

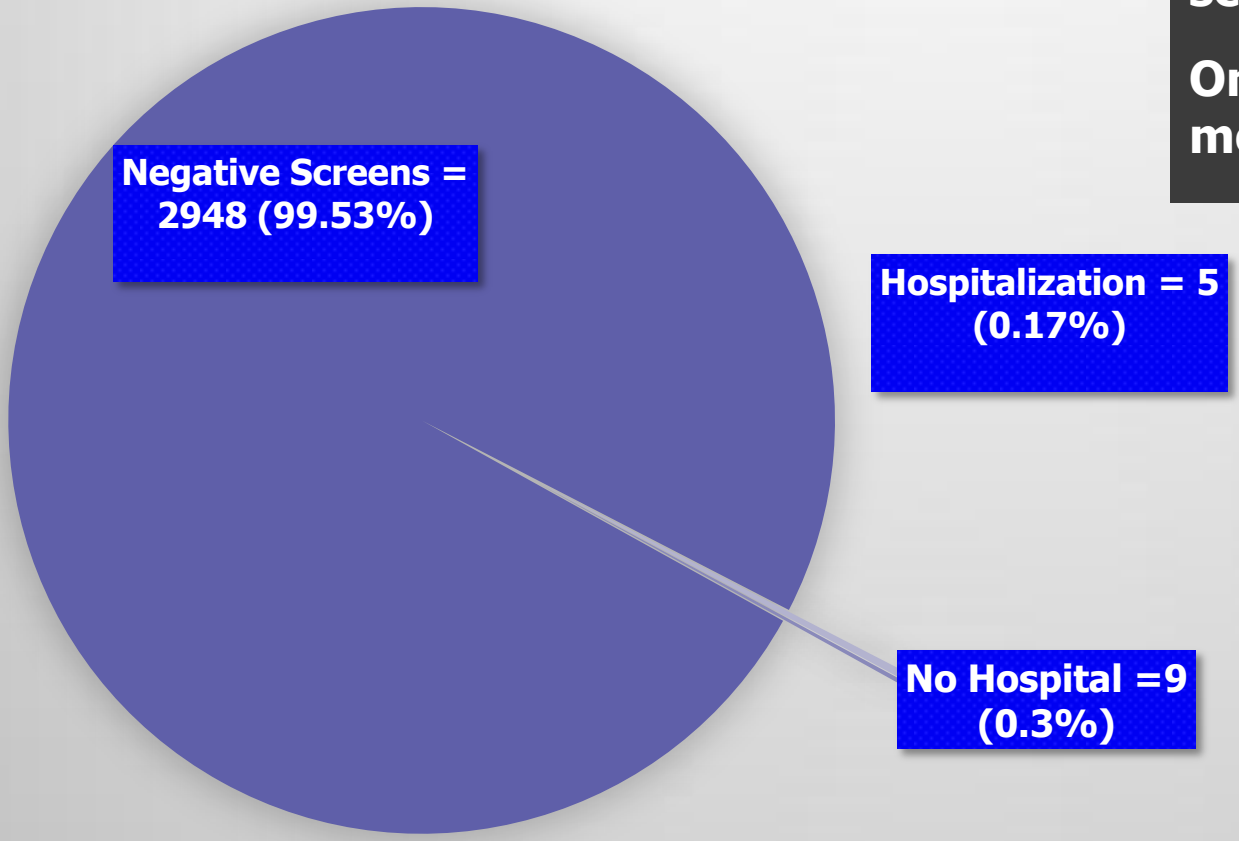
Questions Used to Facilitate Appropriate Care

http://youtu.be/fx3N3uDUQbo

Screening Vets with C-SSRS: Only .17% Required Referral to More Acute Care

Only 14 out of 2962 screened positive (.47%)

Only 5 (.17%) required more acute care



VA SAFE-VET demonstration project – First large-scale study of C-SSRS in the VA
Bridget Matarazo and Lisa Brenner Severity, Intensity and Behavior subscales predict suicidal behavior 6 months later

Connecticut Army National Guard

- Policy - used in every soldier-soldier and leadership-soldier interaction.
- Over 3000 screenings completed in PHA Oct 2014-Sept 2015 identifying 11 soldiers needing assistance.
- **No suicides** in any of those screened

Improving Suicide Screening at the Cleveland Clinic through Electronic Self-Reports: PHQ-9 and the Columbia-Suicide Severity Rating Scale (C-SSRS)

Irene L. Katzan[1], M.D.; Adele C. Viguera[1], M.D., M.P.H; Taylor Burke[2], B.A.; Jacqueline Buchanan[2], A.B.; Kelly Posner[2], Ph.D.
[1]Cleveland Clinic [2]Columbia University Medical Center

Improved Identification with Decreased False Positives

PHQ-9 Suicide Item: Thoughts that you would be ***better off dead*** or of ***hurting yourself*** in some way

Outpatient Psychiatry Pilot – Self Report Computer Version (523 Encounters)

- 6.2% positive screen on C-SSRS
  vs.
- 23.8% endorsed item #9 of PHQ-9

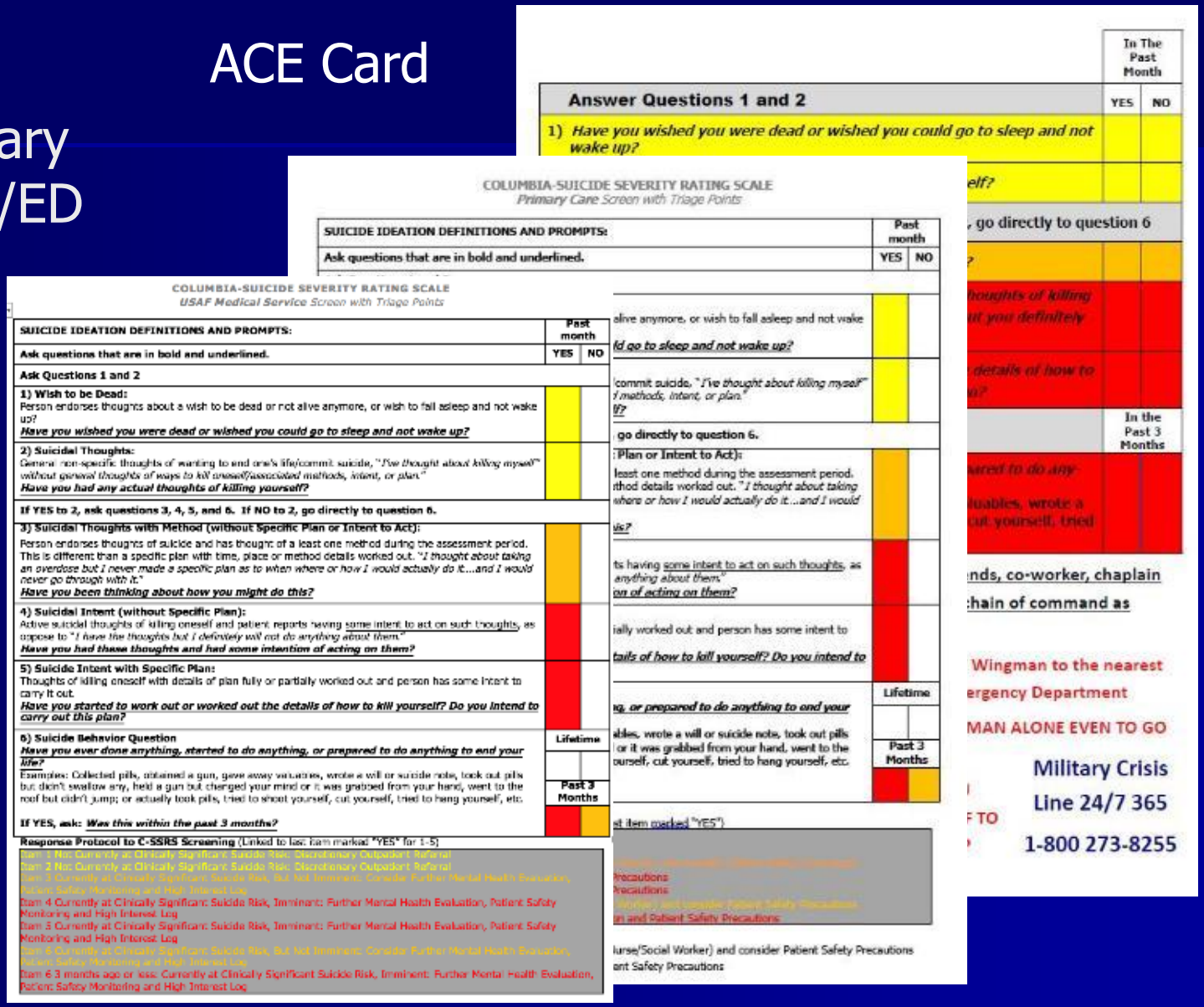
Most, but not all, of the positive Columbia screen patients endorsed #9 of PHQ9 e.g. Cases were missed

Flexible Toolbox: Same Triage Points – Unique Next Steps

ACE Card

Primary Care/ED

USAF Medical Service Screener with Triage Points



Easily Integrated into Existing Checklists

California corrections department spent approx. **$24 million in 2010** on a suicide-watch program, which they believe **could be cut in half by these methods**

MENTAL STATUS SCREENING

The following six questions ask about how you have been feeling. For each question tell me if you have felt this way NONE of the time, A LITTLE of the time, SOME of the time, MOST of the time, or ALL of the time.

In the past 30 days about how often did you feel...	NONE	A LITTLE	SOME	MOST	ALL
1. ...nervous?	0	1	2	3	4
2. ...hopeless?	0	1	2	3	4
3. ...restless or fidgety?	0	1	2	3	4
4. ...so depressed that nothing could cheer you up?	0	1	2	3	4
5. ...that everything was an effort?	0	1	2	3	4
6 ...worthless?	0	1	2	3	4
TOTAL SCORE FOR 1-6 = ____ Column Total =					

In the past month:	YES	NO
7. ...have you wished you were dead, or wished you could go to sleep and not wake up?		
8. ...have you *actually* had any thoughts of killing yourself?		
If NO to Question 8, SKIP to Question 12		
9. ...have you been thinking about how you might do this?		
10. ...have you had these thoughts and had some intention of acting on them?		
11. ...have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?		
12. Have you ever done anything, started to do anything, or prepared to do anything with any intent to die? (*For example collected pills or a razor blade, made a noose, given things away, or written a goodbye or suicide note.*)		

If YES, ask: How long ago did you do any of these things?

- ☐ More than one year ago?
- ☐ Between three months and one year ago?
- ☐ Within the past month?

13. If YES, ask: How many times have you done any of these things? ☐ times

Scoring Rules

1. If the total of 1 thru 6 = 8 to 12 → ROUTINE REFERRAL
2. If the total of 1 thru 6 = 13 to 17 → URGENT REFERRAL
3. If the total of 1 thru 6 >= 18 → EMERGENT REFERRAL

Questions 7-13

4. If item 7 = YES → ROUTINE REFERRAL
5. If item 8 or 9 = YES → URGENT REFERRAL
5. If item 10 or 11 = YES → EMERGENT REFERRAL
6. If item 12 = More than one year ago → ROUTINE REFERRAL
7. If item 12 = 3 month to 1 year ago → URGENT REFERRAL
8. If item 12 = Within past month → EMERGENT REFERRAL
9. If item 13 = 2 or more → URGENT REFERRAL

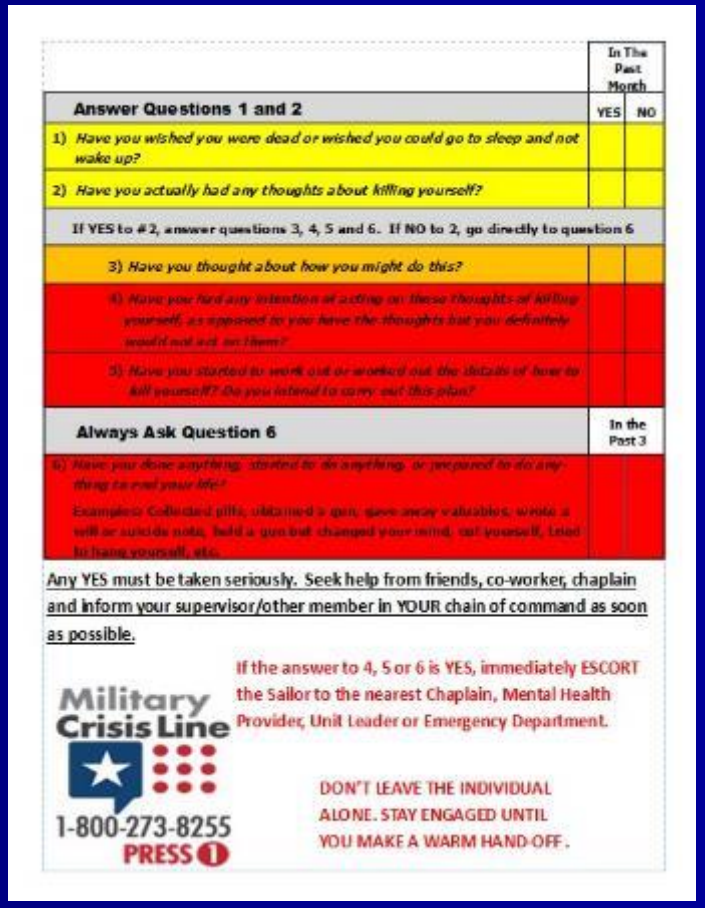
Instructions

1. Ask ONLY non-MHSDS inmates
2. Ask all questions just as they are written.
3. All questions (except 12) apply to the last 30 days.
4. Repeat questions as necessary.
5. Score questions 1-6 by totaling the numbers in the boxes.
6. Questions 7-12 are YES/NO.
7. Use the scoring rules to determine need for referral for further evaluation.
8. If the inmate refuses → EMERGENT referral.
9. In all cases, use best judgment to refer – no matter the answers to the questions.

Signature of Person Completing Form _____ Date _____ Time _____

Printed Name of Person Completing Form _____ Inmate Name & CDCR Number _____

DoD and Military ACE Cards for use across all military branches



Breaking the Silence

When We "Just Ask" We Break the Silence and Give Permission to Connect and Build a Path to Openness and Resilience Across Generations

"This is not only saving millions of lives, it is literally changing the way we live our lives, breaking down barriers that have been built over thousands of years. But we are just one nation and every nation deserves this lifesaving tool."

Common Language in an Intervention in and of Itself: Peers Helping Each Other

- Building buddy-to-buddy quick-response support systems
- "Just Ask" is much more than a screening intervention
- Common language builds connections
- It's a method with a message that fights loneliness and hopelessness that cause suicide.

For questions and other inquiries, email: posnerk@nyspi.columbia.edu

Website address for more information:

www.cssrs.columbia.edu

DoD Open Burn and Open Detonation (OB/OD)

J. C. King
Director for Munitions and Chemical Matters
ODASA(ESOH)

Camp Minden

What is wrong with these pictures?

CAMP MINDEN – THE PERFECT STORM

- **The 18M pounds of propellant and explosives in storage at the time of initial explosive incident were not DoD military munitions – about 15M pounds of M6 belonged to Explo Inc.**
- **By court order, the Louisiana Military Department (LMD) took ownership of the approximately 15M pounds of M6**
- **Environmental Protection Agency (EPA) and State wanted to reduce the explosive hazard immediately – described as an imminent and substantial endangerment to the public**
- **Department of the Army (DA) advised, with Secretary of the Army approval, EPA that the quickest way to reduce the potential danger was by using Open Burning (OB)**
- **EPA's plan to OB 15M pounds of M6 created a firestorm of public outcry and Congressional interest**
- **EPA, with advise of DA, settled on use of an Eldorado Engineering Inc. (ESI) - designed Contained Burn Chamber (CBC) – similar to one being emplaced at Letterkenny Army Depot**
- **LMD contracted ESI to conduct a removal action at Camp Minden using a CBC**

Problem Statement

- U.S. citizens living near Department of Defense (DoD) military installations that demilitarize (destroy) munitions through Open Burn and Open Detonation (OB/OD) expressed concerns regarding emissions and pollutants effecting their health, the environment, and the overall well-being of their communities.
- Public concerns have resulted in:
  - Local activism
  - Requests for information from elected officials
  - Media inquiries, printed articles, and other reports across a variety of media
- Responses to public and media questions are usually locally generated by installations with OB/OD sites and are not centrally managed for situational awareness or distributed throughout the DoD.

DoD Open Burn and Open Detonation (OB/OD) Requirement

- DoD recognizes that EPA, state environmental regulators, state legislatures and the public are expressing concerns about the potential environmental implications associated with the disposal of munitions through OB/OD.
- DoD is committed to engaging with EPA and state regulators to address these concerns, while safely maintaining a critical capability that supports munitions management and training requirements.
- DoD is dedicated to protecting human health and the environment by handling, storing and destroying excess, obsolete and unserviceable munitions safely and in an environmentally responsible manner.

DoD Open Burn and Open Detonation (OB/OD) Requirement

- DoD maintains thousands of different types of military munitions in support of the National Defense.
- Military munitions are inherently dangerous.
- DoD actively manages its munitions stockpile to minimize munitions that are obsolete, excess, or unserviceable.
- DoD manages munitions through:
  - Foreign Military Sales
  - Recycling or recovering parts or the whole munition
  - Demilitarization through alternative technologies
  - OB/OD

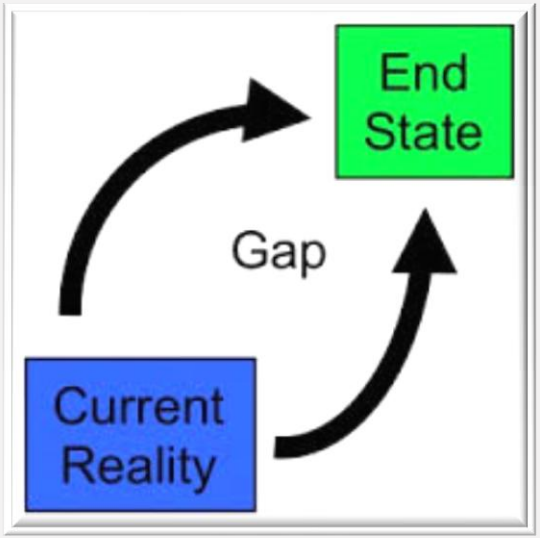
DoD Open Burn and Open Detonation (OB/OD) Requirement

DoD primarily uses:

- Open burn (OB) to destroy bulk propellants, raw explosives (e.g., contaminated explosive waste) or explosive-contaminated packaging that may not be able to be transported or demilitarized safely using other available technologies.
- Open detonation (OD) to destroy DoD military munitions that:
  - Are recovered during an explosives or munitions minimum
  - Determined unsafe for storage or transport;
  - Cannot be demilitarized safely by other means because of their design, size or explosive content.
- OB/OD sites are permitted based on a limited amount of munitions that can processed at a given time.

Desired End State

The desired End State is for the DoD to maintain its capabilities to demilitarize excess, unserviceable, and obsolete military munitions through OB/OD when required.



Maintaining this End State requires effectively communicating with citizens, elected officials, and the media.

TRAUMATIC BRAIN INJURY & POST-TRAUMATIC STRESS DISORDER

The TBI and PTSD Alphabet Soup of Brain Injury

Global EOD Symposium & Exposition
Bethesda, MD August 9, 2017

Dr. Christina Stasiuk
National Medical Director for Health Disparities, Cigna

Together, all the way.®

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What we'll discuss

- Why we are talking about TBI & PTSD
- Traumatic brain injuries (concussions)
- Post-traumatic stress disorder
- Who's doing what
- What you can do

http://www.businessinsider.com/an-eod-technician-explains-what-life-is-really-like-in-the-field-2012-8#its-not-like-the-movies-1

Why is this important?

It’s complex

- 33% Physically disabled
- 19% Recovering from injury
- 33% TBI
- 20% PTSD (most non-combat)

Results in:

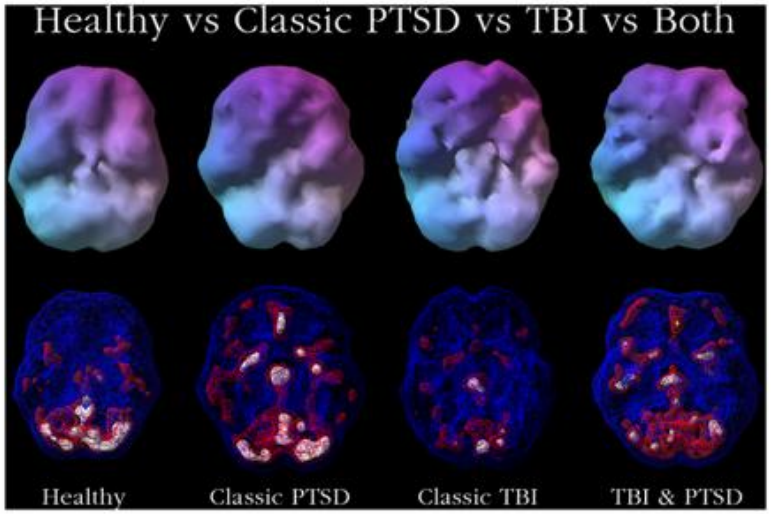
- Disability
- Unemployment

https://www.dvidshub.net/image/1056689

Let’s call it what it is

- mTBI
- Signature injury
- Invisible wound
- Silent epidemic
- Concussion
- Brain damage

Fig 3. Brain SPECT Images of Healthy, PTSD, TBI and PTSD Co-morbid with TBI Perfusion Patterns.



Amen DG, Raji CA, Willeumier K, Taylor D, Tarzwell R, et al. (2015) Functional Neuroimaging Distinguishes Posttraumatic Stress Disorder from Traumatic Brain Injury in Focused and Large Community Datasets. PLOS ONE 10(7): e0129659. https://doi.org/10.1371/journal.pone.0129659
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0129659

PLOS ONE | TENTH ANNIVERSARY

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What's different for EOD technicians?

FIGURE 2.3 Potential consequences of blast exposure.

https://www.vetshq.com/wp-content/blogs.dir/files/sites/11/2013/10/Vol-7-Long-Term-Consequences-of-Traumatic-Brain-Injury.pdf

Blast impacts the whole body

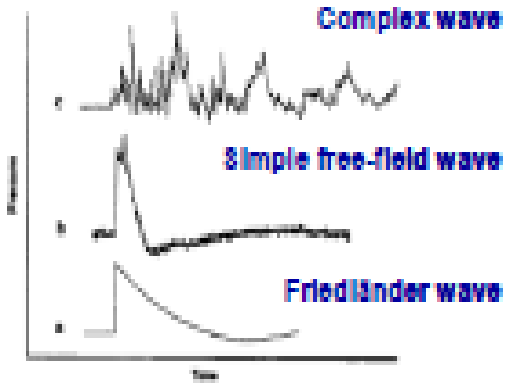


FIGURE 2.4 Explosion-induced shock waves: (a) idealized representation of pressure-time history of an explosion in air; (b) shock wave in open air; (c) complex shock-wave features in closed or urban environment.
SOURCE: Mayorga, 1997. Reprinted with permission from Elsevier Science, Ltd. 2008.

- https://www.vetshq.com/wp-content/blogs.dir/files/sites/11/2013/10/Vol-7-Long-Term-Consequences-of-Traumatic-Brain-Injury.pdf

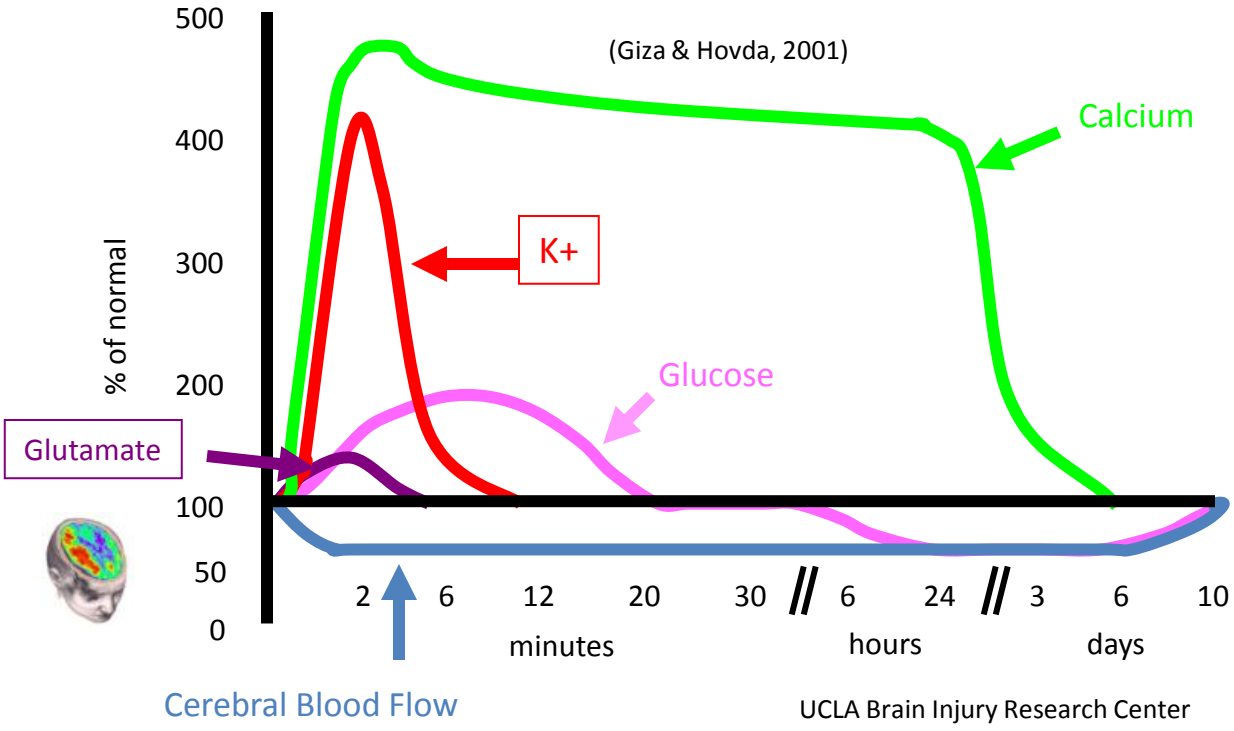
Knowledge check

A buddy has had several CT scans and MRIs and has been told that “Everything is normal.” Yet, he, his friends and family know something is not right.

Why can’t anyone see anything?

- Nothing is wrong
- Traumatic brain injury is a metabolic dysfunction
- Traumatic brain injury is a structural injury
- Something else

What happens to the brain after head trauma?



Sharing knowledge
What have you observed with Traumatic Brain Injury (TBI)?

- .
  - .
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Some symptoms of TBI

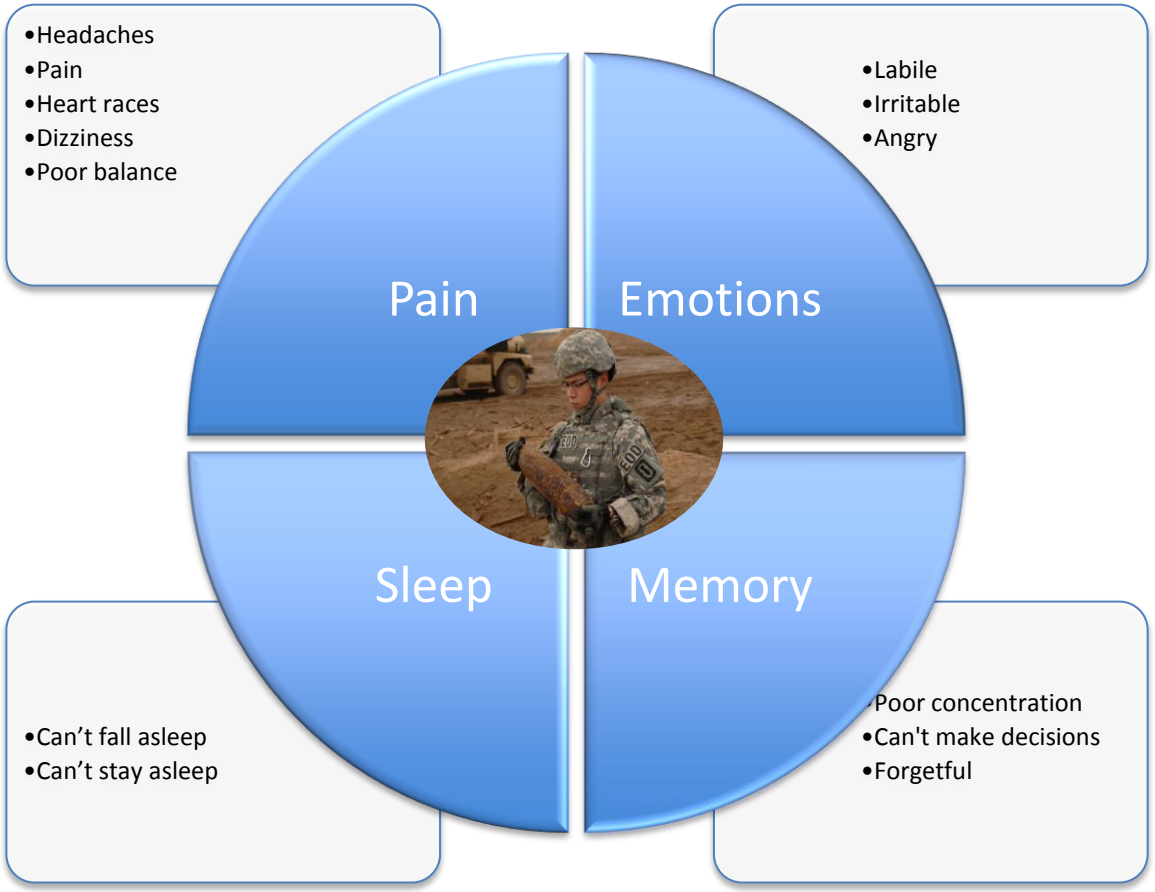
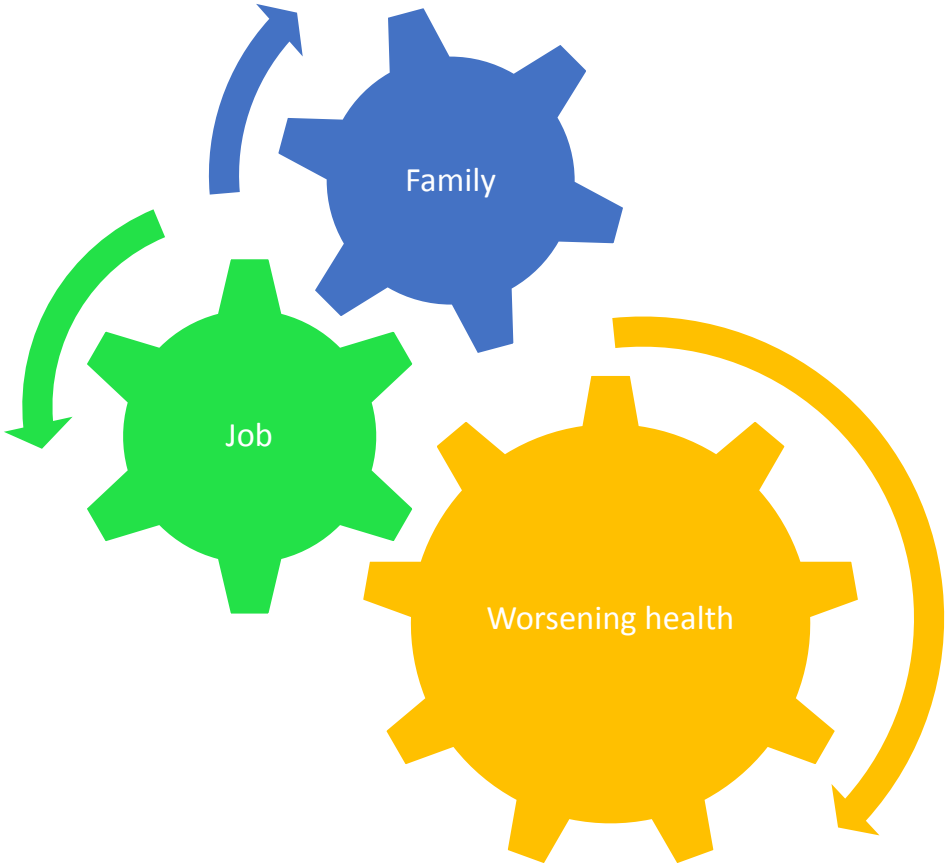


Photo credit: Wired.com

Differences by gender

Men	Women	Blasts
• TBI • PTSD • Substance abuse	• More severe symptoms • Depression • Anxiety	• No differences except more severe symptoms in women

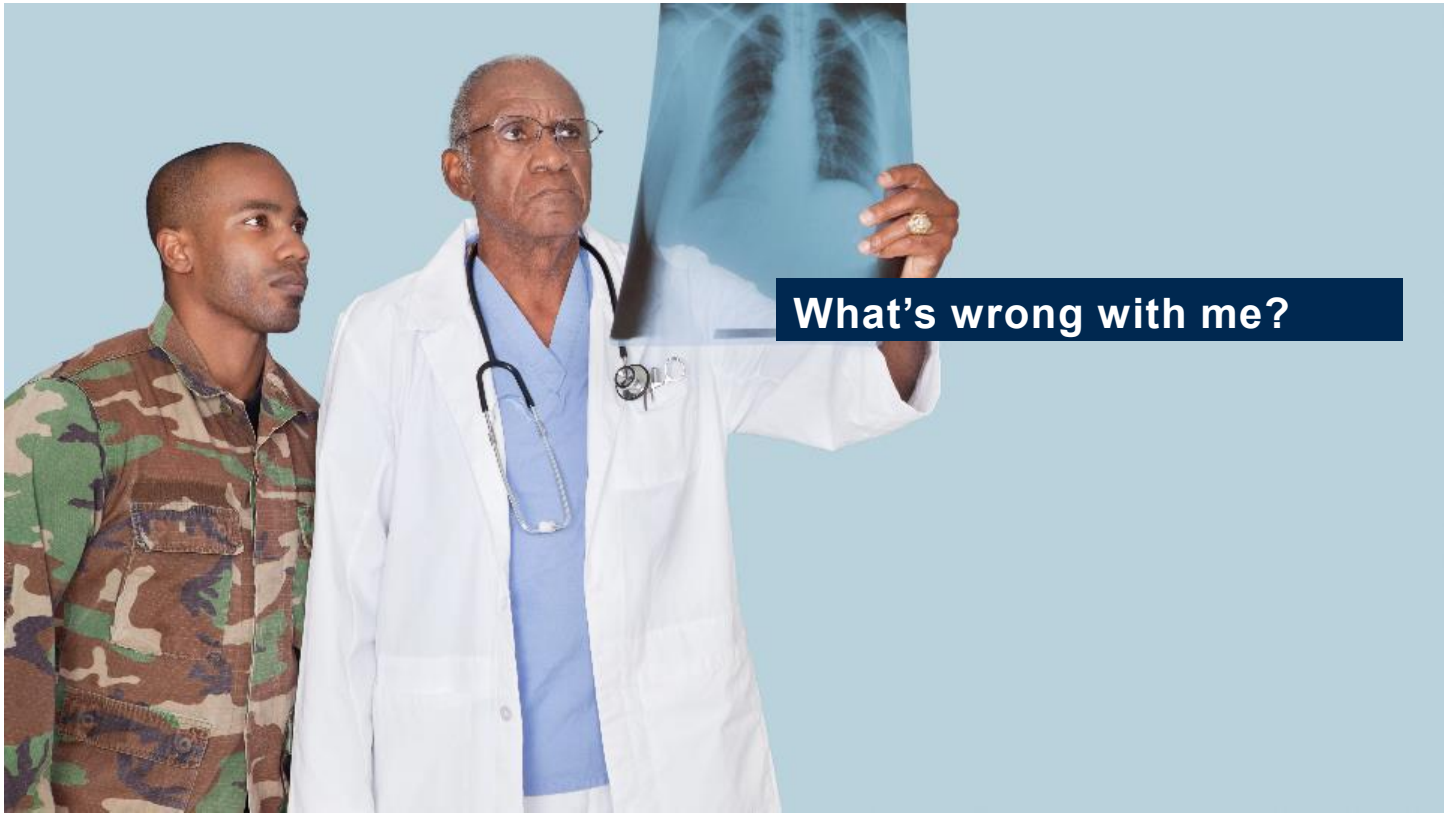
What happens over time?



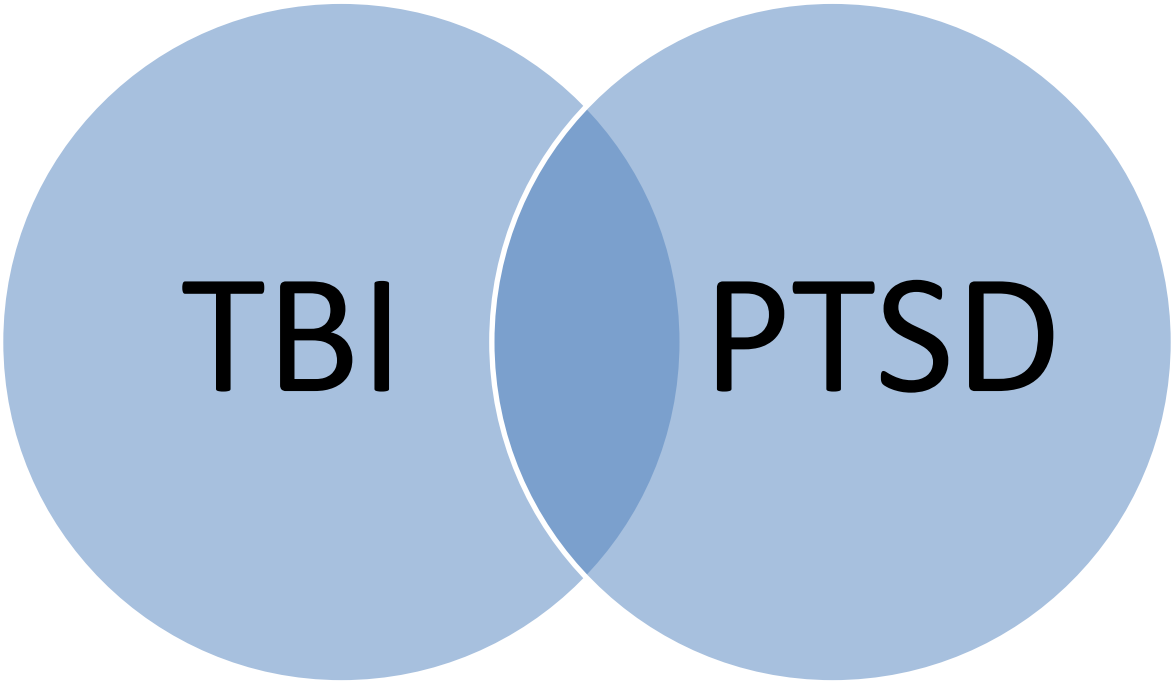
Source:https://www.dvidshub.net/image/945650/eod-group-2-returns-home-after-leading-afghan-eod-mission

It does get better

Source: Return to Adventure, 2012


What's wrong with me?

Blunt trauma in the military is different



Diagnostic criteria for PTSD

Review articles in the New England Journal of Medicine

January 10, 2002

TABLE 1. DIAGNOSTIC CRITERIA FOR PTSD.*

A person must have been exposed to a traumatic event.
- The event involved a perceived or actual threat to the person's own life or physical integrity or that of another, such as a physical or sexual assault, rape, a serious accident, a natural disaster, combat, being taken hostage, torture, displacement as a refugee, sudden unexpected death of a loved one, and witnessing a traumatic event.
- The person's response to the event involved fear, helplessness, or horror.

The person persistently reexperiences the event in at least one of several ways:
- The person has intrusive recollections of the event.
- The person has nightmares.
- The person has flashbacks, which are particularly vivid memories that occur while he or she is awake and make him or her act or feel as though the event was recurring.
- The person has intense psychological distress in response to reminders of the traumatic event.
- The person has intense physiological reactions in response to reminders of the event (including palpitations, sweating, difficulty breathing, and other panic responses).

The person avoids reminders of the event and has generalized numbness of feeling, as indicated by the presence of at least three of the following:
- The person actively avoids pursuits, people, and places that remind him or her of the event.
- The person avoids thinking of or talking about the event.
- The person is unable to recall aspects of the event.
- The person has lost interest in or participates less in activities.
- The person has felt detached or estranged from other people since the event.
- The person has a restricted range of emotions or a feeling of numbness.
- The person feels as though his or her life has been foreshortened or as though there is no need to plan for the future, with respect to his or her career, getting married, or having children.

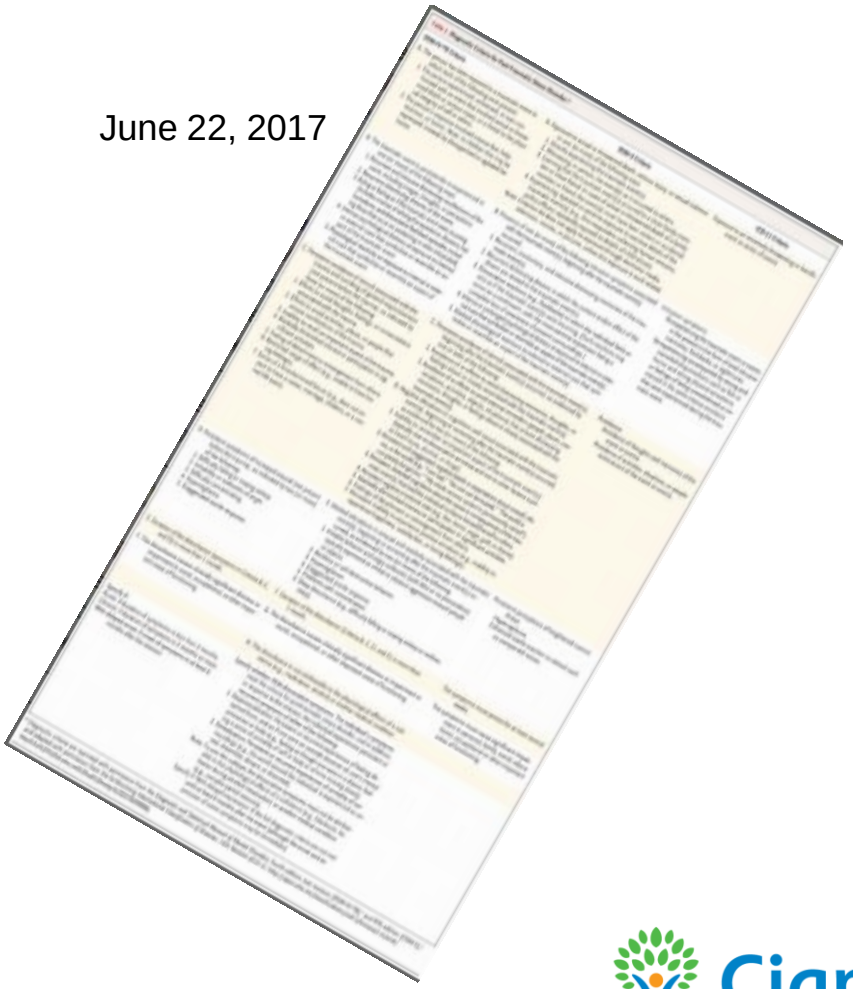
The person has symptoms of increased arousal, as evidenced by the presence of at least two of the following:
- The person has difficulty falling or staying asleep (sometimes related to fear of having nightmares).
- The person is irritable and has feelings or outbursts of anger.
- The person has difficulty concentrating.
- The person has become more vigilant and concerned about safety.
- The person has exaggerated startle reactions in response to sounds or movements.

The three types of symptoms must be present together for at least one month.

The disorder must cause clinically significant distress or impairment in social, occupational, or other areas of functioning.

*There are three subtypes of PTSD. Acute PTSD refers to symptoms that last less than three months. Chronic PTSD refers to symptoms that last three months or longer. Delayed-onset PTSD refers to symptoms that begin at least six months after a traumatic event. Adapted from the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition.[3]

June 22, 2017



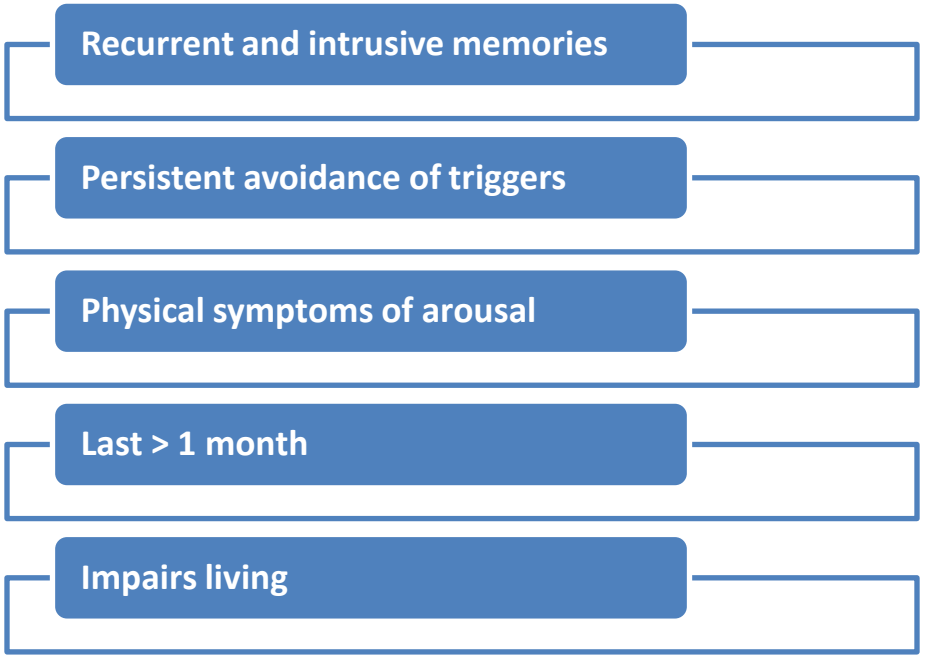
How is post-traumatic stress disorder defined?

Exposure to extreme stressor or traumatic

event

which resulted in fear, helplessness or horror

AND



True or false?

PTSD in military members manifests immediately after a traumatic event?

True or False

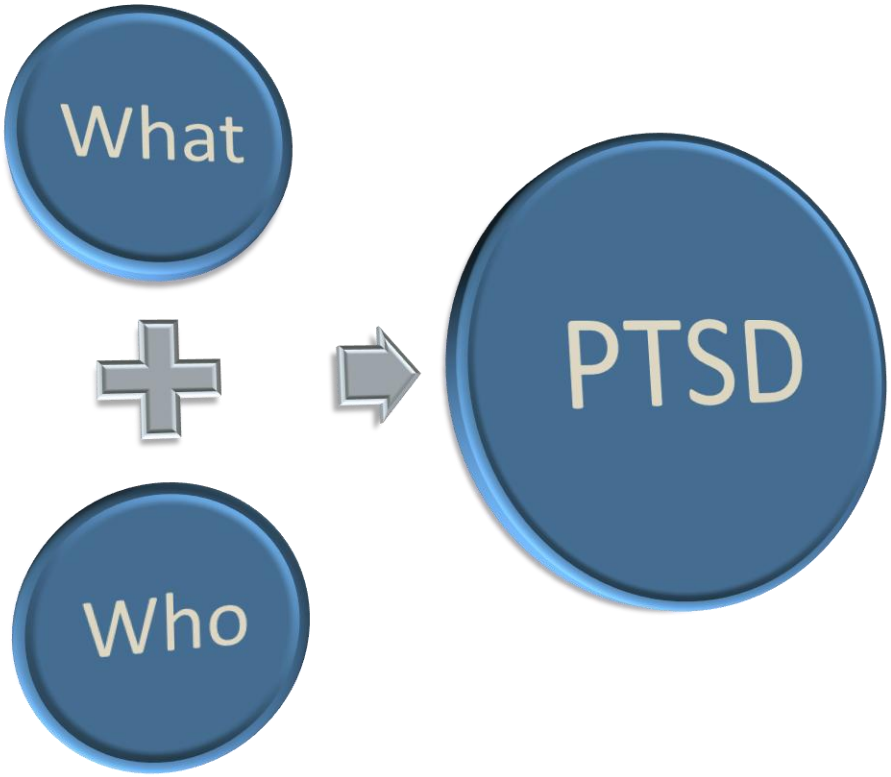
PTSD is different in the military

- Delayed appearance
- Severity fluctuates
- Impacted by other injuries
- TBI

Photo: US Navy Photographers Mate 1st Class Ted Banks

How does PTSD manifest?

Factors resulting in PTSD



How can it be diagnosed?

PC-PTSD – 5

- Primary Care PTSD Screen (PC-PTSD-5)
  - 5 questions
  - If 3 are positive, refer for full assessment

PCL

- PTSD Checklist (PCL) 17 items
  - Can also monitor treatment response
  - Scoring: Not at all/ A little bit/ Moderately/ Quite a bit/ Extremely
  - Score of 38/80 or higher indicates probable PTSD in veterans
  - Versions of PCL-5
    - PCL-C for civilians
    - PCL-M for military
    - PCL-S of non-military

PC-PTSD – 5
Simple yes or no questions

Sometimes things happen to people that are unusually or especially frightening, horrible, or traumatic. For example:

- a serious accident or fire
- a physical or sexual assault or abuse
- an earthquake or flood
- a war
- seeing someone be killed or seriously injured
- having a loved one die through homicide or suicide.

Have you ever experienced this kind of event?
YES / NO

If no, screen total = 0. Please stop here.

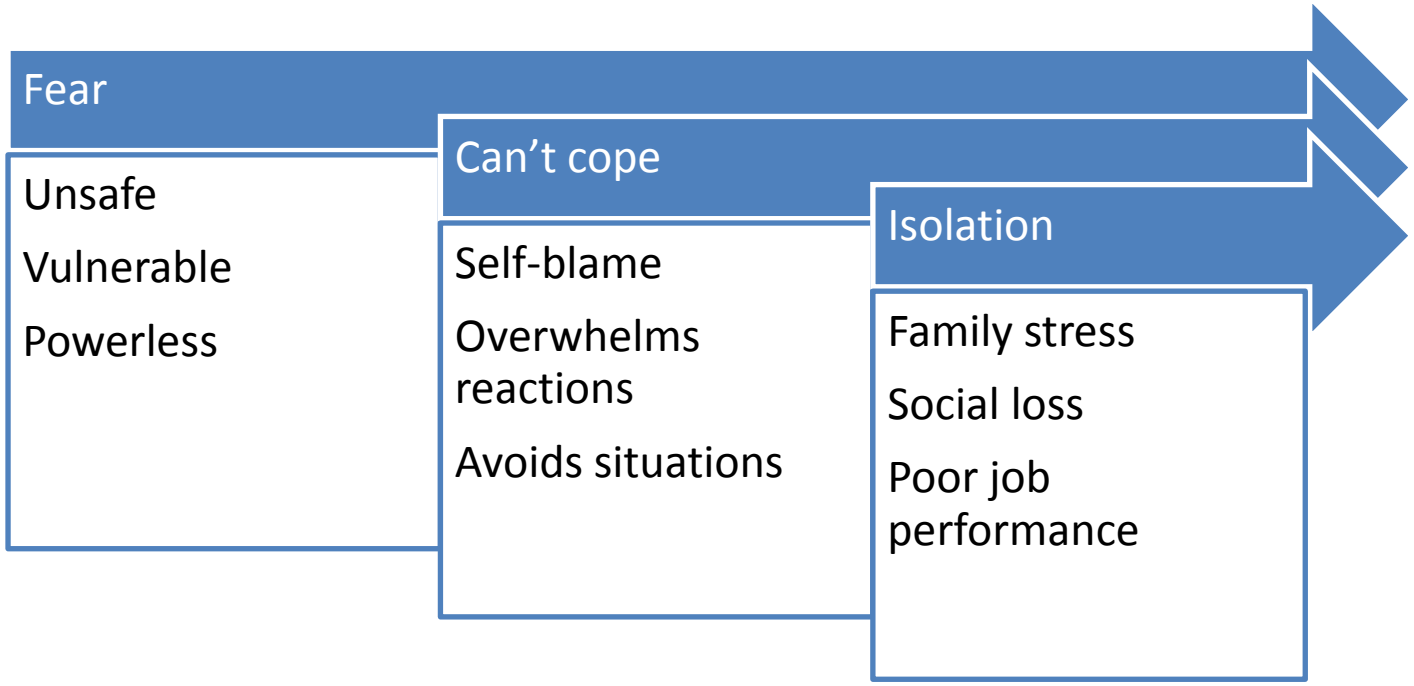
PC-PTSD – 5

YES or NO?

In the past month, have you...

- Had nightmares about the event(s) or thought about the event(s) when you did not want to?
- Tried hard not to think about the event(s) or went out of your way to avoid situations that reminded you of the event(s)?
- Been constantly on guard, watchful, or easily startled?
- Felt numb or detached from people, activities, or your surroundings?
- Felt guilty or unable to stop blaming yourself or others for the event(s) or any problems the event(s) may have caused?

Chronic PTSD



Treatment goals

Need to stabilize, stop self-destruction, address loneliness and despair.

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What are treatment options?

- Counseling
- Trauma-focused therapy
  - Exposure therapy
  - Cognitive therapy
- Medications
- Innovative treatments

Source:https://www.dvidshub.net/image/3482112/army-reserve-hosts-inaugural-well-being-event

What's next?

Working on better

- Prognostic tools
- Diagnostic tests
- Treatment modalities

Who else is working on this?

Cigna's approach

Cigna

What can you do?

- Be a peer – Ask!
- Refer to a reputable center with a team approach
- Partner with organizations
- Work with researchers

https://www.dvidshub.net/image/3480649/runners-al-udeid-run-5k-memory-fallen-eod-service-members

Thank you

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